

# ITEMS OF INTEREST.

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## ORIGINAL COMMUNICATIONS.

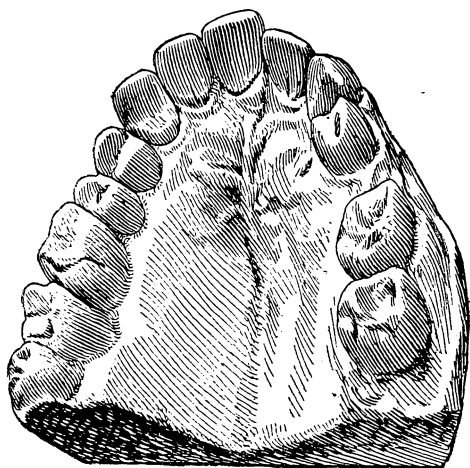
### A REMARKABLE CASE OF NECROSIS.

*W. W. Rowe, D.D.S., Greensboro, N. C.*

In April, 1892, Mrs. M—— came to my office with the left upper central incisor badly abscessed, and very loose; the left second bicuspid was also abscessed, and intervening teeth loose; the gums were purple and swollen, and the breath fetid. This condition was caused by a sleeping child throwing up its arm and striking the mother a violent blow on the mouth, loosening the teeth and causing the gums to bleed profusely around the necks of the teeth; the soreness, however, passed away in a day or two, and there was no further trouble till it became evident that the central tooth and the second bicuspid were abscessing.

I decided to first extract the central incisor, and an abscess as large as a pea rolled out of the cavity, followed by a protrusion of bone, which I removed with a pair of pliers; it proved to be a thin piece of necrosed alveolus about three-fourths of an inch in length. Further exploration revealed numerous other pieces of necrosed process and bone. A curved explorer could be passed through a pus channel over the lateral, cuspid and first bicuspid to the abscessed second bicuspid, which I next removed, and

pumped through the artificial opening phenol-sodique, full strength. I dismissed the patient, feeling satisfied that at the



next sitting the three other teeth involved would have to be extracted.

The patient returned in a week, several pieces of necrosed bone had worked through the pus channel and down through the sockets where the teeth had been removed. She had used faithfully an antiseptic mouth wash I had prescribed. Examining, I found the gums had assumed a healthier condition, but the lateral cuspid and first bicuspid were detached from the process posteriorly, but the three teeth were firmly united in a solid block to a thin plate of the anterior process, so that by taking a lancet and splitting the membrane back of the teeth they could have been removed simultaneously in a solid block. Taking hold of the three teeth and rocking them gently, the sharp edges of bone could be felt to crepitate.

A consulting physician told the patient that she would have to "go North and be treated by a specialist for necrosis of the superior maxilla." I determined in the meantime to give all the palliative treatment I could, and first detaching all the necrosed bone I could reach, I pumped peroxid of hydrogen freely and liberally through the pus channel, giving same treatment at each sitting and gradually getting rid of all necrosed bone. Finding the treatment creating so marked an improvement and the drainage so perfect, I dissuaded my patient from having an operation performed, feeling assured that I could effect a cure. The treatment was the usual one, and there is nothing remarkable to record about that—but the result, I think, is almost without a parallel. Eight weeks ago, and four years from the time the accident occurred, the accompanying impression was taken. Wonder of wonders! You see the lateral, cuspid and bicuspid have moved in solid phalanx and joined company with the right central incisor, and are as immovable as if they had originally grown there, the gums are solid, rosy-hued and healthy, and the teeth show no sign of dead pulp.

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CHLORO-PERCHA AS AN INSULATOR.—Before setting crowns or bridges on hypersensitive teeth, it will be found that thoroughly coating the entire surface of the affected teeth with a film of chloro-percha will prevent the pain experienced from thermal changes in these teeth after being crowned, and will also prevent the pain produced by the acid in the cement while setting the crown.

*D. W. Dillehay.*

## WHY ARE OUR TEETH DEGENERATING?

*Arthur Turner, England.*

This is a question that is constantly being asked, but is not so easily answered. We cannot fix on any one source of mischief and say if this was removed the teeth of the race would return to the normal healthy condition of our ancestors.

The root of the mischief will, however, be found among the following causes :

First. Starvation, or scarcity of natural tissue-forming material in the food.

The Highlander who, still clinging to the habits of his ancestors, eats his daily portion of oatmeal porridge and oatcake, knows comparatively little of caries till he forsakes the highlands and begins a city life. When he has fairly adopted the ordinary diet of the citizens his teeth show a tendency to decay, and he suffers. There is something in whole-grain foods which supplies stamina to the harder structures of the body. It is wanting in the whiter breads which are unfortunately preferred by us.

Second. Overwork of the brain is undoubtedly another cause of tooth decay. If the brain be doing a normal amount of work it easily finds abundance of material in healthy blood to replenish it and repair its waste. But the brain that is in a constant condition of tension, worry, and overstrain, tries to draw an overdraft of nourishing material from the blood supply. The blood thus impoverished cannot provide adequate nourishment for the other parts of the body, and the teeth suffer first, probably because even their normal blood-supply is small.

Third. Want of proper use of teeth and jaws. It is an almost universal rule that an organ not properly used will undergo a process of degeneration and decay. The daintier foods of civilized life do not require the teeth to do the hard work as the fare of our ancestors did. Again, if one hurries over a meal it is impossible even to give modern foods the amount of mastication they ought to have. Hence our teeth are called on to exert a gradually decreasing amount of grinding power, and in the course of generations less power is provided. The jaws are getting smaller and smaller. The wisdom tooth is disappearing altogether. The other teeth are becoming less efficient because apparently less needed.

Fourth. Of all causes of decay uncleanness is perhaps the most fertile. The clean tooth may decay—the neglected tooth must decay. It has lost its chance of self-defense.

Decay is caused by minute forms of life. If the teeth do not have their necessary daily cleansing these germs multiply in the débris of food and saliva, especially at the gum border. Another source of mischief is the acidity of many unhealthy mouths.

Our cleansing material should contain some efficient and pleasant antiseptic. It must also contain a proportion of some harmless and agreeable antacid to neutralize acidity.

The use of the tooth-brush was not so necessary to our ancestors because their coarser foods and more powerful mastication served in a great measure to keep the surface of the teeth clean without artificial aid.

These then are the principal causes of the degeneration of our teeth. If we sum them up we shall find they are all due to the tendencies of civilization to lead us away from the natural life of our ancestors.

When ought we to go to the dentist? Many think it unnecessary to devote particular attention to the teeth till the appearance of the mouth is affected by damaged, decayed, or broken teeth. Others give their teeth no attention till pain compels them to do so. The stupidity and short-sightedness of either policy is evident. Every one who thinks a moment on the subject knows that we cannot masticate our food satisfactorily if one or more of the teeth are tender, inflamed, decayed, or otherwise out of working order, and that if this be the case the mouth requires immediate attention.

Here let us say a word or two on the importance of mastication. The process of digestion begins in the mouth. Trituration and mastication are voluntary acts, and are liable to be neglected unless some attention be given to the subject, and a definite habit formed.

The best codes of rules for athletic training insist on every mouthful of food being thoroughly and carefully masticated. If this be neglected the nutriment from the food cannot be transferred to the blood in proper proportion and the tissues cannot be properly repaired and built up. Take away proper mastication, and you take away this repair; remove the possibility of this repair and you must in time remove health, vigor, and all that makes physical life worth the living. Hence the importance of having the mouth in thoroughly good working order, either with sound or repaired natural teeth, or artificial substitutes.

## THE FIRST POST-GRADUATE SCHOOL.

*Dr. L. P. Haskell, Chicago.*

Read before the Twenty-eighth Annual Session of the Seventh District Dental Society, New York.

At the meeting of the International Medical Congress in Washington I met Dr. Catching, of Atlanta. In conversation with him he suggested the idea of a Post-Graduate Dental School. At the time it did not strike me as practicable. Later on I gave the subject more thought, and the next spring decided to try the experiment. It has been found to fill a long-felt need.

Since the introduction of vulcanit rubber into dental practice, thirty-seven years ago, the great mass of dentists who have come into practice have had little or no instruction in metal plate work. Even those who have had instruction, it has been so incomplete or rendered so difficult they have not been inclined to practice it. A rubber plate is so easily constructed, and the mass of patients being satisfied with it, the dentists have not been inclined to recommend the metal plate to their patients.

However, since the introduction of crown- and bridge-work into dental practice it has become a necessity that cannot be overlooked for every dentist to be able to know how to do metal work.

How shall he learn it? Not by a course of instruction in the dental college, for he cannot spare the time nor the money for a three years' course. And even if he could, the instruction there is gained under such difficulties he does not feel competent to undertake it. Large classes cannot be successfully handled in the college laboratory. There are not demonstrators enough, and too often these are incompetent to teach, being recent graduates, and no where in the dental college is experience needed so much as in the laboratory. Among our students have been many who came directly from the dental colleges with their diplomas to take the course we have provided for them. Too much of the student's time in the college is taken up in the lecture-room, in the futile attempt to instruct him how to do a mechanical operation, which cannot be and never is learned but at the work-bench, under the eye of an expert.

I speak from seven years' experience as a lecturer in two colleges, and seven years more in practical instruction in what I have termed a Post-Graduate School. My plan has been not to instruct in classes, but individually, with no lectures but what would be the practical or essential part of the lecture given in telling the

student not only how to do a thing, but the reason why. And so, step by step, the student is carried through a systematic course, first of metal plates, full and partial, rubber attachments and soldered work. Especial attention is given to the proper selection, arrangement and articulation of teeth; the contouring of the artificial gums, so as to restore the contour of the mouth; the proper adjustment of clasps, which seems to be so little understood. This is followed by instruction in gold crown- and bridge-work, and the Parmlly Brown system of porcelain crown- and bridge-work, which is the *ne plus ultra* of work in that line, as it avoids the mutilation of teeth and the unsightly exposure of gold. The construction of this work is followed by (though optional) the making of continuous gum work. Porcelain work is rendered easy now by the introduction of the Custer electric oven—small, compact, no heating of the room, easily managed. We have to depend on this oven, as we have no chimney to use the "Land oil furnace," which is far superior to the coke or gas furnace.

A simple system of metal-plate work, whereby sure results are accomplished with no trouble, renders the insertion of metal plates as easy and, in fact, more satisfactory than rubber, and since the introduction of pure aluminum, there is no reason why a rubber-plate should be worn for a permanent denture, in view of the fact that from its non-conductibility great injury is done to the mouth by the excessive absorption of alveola process, a thing I saw nothing of in my first fourteen years practice of prosthetic dentistry before the introduction of rubber, but have been a constant witness of ever since.

Our students have come from every State, from Canada many, Mexico, Chili, Australia, New Zealand, England, Scotland, Sweden, Germany, Spain, Netherlands and India. At least a dozen of them were from fifty-five to seventy years of age, having practiced dentistry for a lifetime, but desirous of being posted on the latest improvements.

GRATIFYING TO SMOKERS.—Professor Hajak, of Vienna, says smokers are less liable to diphtheria and other throat diseases than non-smokers in the ratio of one to twenty-eight. Dr. Schiff tells us that smoking is forbidden in bacteriological laboratories because it hinders the development of the bacteria. *Medical Record.*

[What a shame that ladies neglect this sanitary habit. No wonder our "delicate" sex is dying out.—ED. ITEMS.]

## ROYAL COLLEGE DENTAL SURGERY.

*Dr. G. G. Brock, Sheldon, Iowa.*

Early in the fall of 1895 I held a correspondence with the Royal College of Dental Surgeons of Ontario, with a view to taking my senior course in that school. My relatives being Canadians, I wished to locate in that country. I had pursued two years of study at the State University of Iowa, Dental Department, having presented a high grade teacher's certificate as proof of my educational qualification for entrance. I was informed by the Ontario school, that as I had not entered the Iowa University as a Latin scholar, they would not admit me there. American dentists will not admit that the instructors or products of our schools are in any point inferior to those of foreign countries. The Royal College of Ontario is a member of the American Association of Dental Faculties, and enjoys all the benefits, privileges and honors which come from such membership. Why does not the American Association "touch up" her haughty member beyond the line, and compel her, if she stays in the Association, to recognize students from American Association schools?

The Ontario laws are such that however eminent or capable an American dentist might be, he could not practice there without being ground through the Royal College mill. Yet some of our States welcome the Royal College graduates with open arms, to compete against our own men. The sound doctrine of "America for Americans" applies equally as well in the professions as in politics. We hope the dignity of the American dental profession will be maintained by demanding reciprocity with foreign countries.

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THE VALUE OF ANTIKAMNIA—The paper just read is to me one of unusual interest and importance. When we take into consideration the many causes of headache, and look back on the treatment in the past for this condition by opium or its alkaloids, chloral, the bromides, etc., and remember their tardiness of producing relief, as well as the great danger of having our patients becoming drug-habitués, antikamnia has proven a godsend to the people, as well as the profession. Antikamnia has almost entirely displaced opium, its compounds and derivatives, for the relief of pain. Its mission, therefore, is a great one and its usefulness is thoroughly established. It does not depress the heart's action ;

it does relieve pain. An extended use from its first appearance has served to increase my confidence in the great value of anti-kamnia.

I may add specifically that in no one feature of its use has it been of more service to me than in overcoming the headache, pain and muscular soreness, suffered by every victim of la grip. Here it is "just the thing."

*Dr. T. H. Stucky.*

### QUACK DENTAL COLLEGES.

[If the following be true, it certainly should be put a stop to.  
—ED. ITEMS.]

TACOMA, WASH., April 13th, 1896.

T. B. WELCH, M.D., Vineland, N. J.

*Dear Doctor*:—We have had existing for a year or two, under the title of the "Tacoma College of Dental Surgery," an institution which is in every way a discredit to the profession.

The school was started originally by a small dental supply company located here, with, I believe two things in view: First, to graduate themselves, and also to create a market for their supplies. Neither the President, Secretary or Treasurer, though teaching all of the branches of dentistry, had ever taken a course in a single branch, and there was not a degree of any sort that was possessed by any member of the dental faculty. The Dean of the College is one of the advertising sort; has his name hung up in street cars, accompanied by glaring sets of false teeth, etc.

I am glad to be able to say this for the rest of the profession, though, that in spite of all efforts to get some reputable practitioner to allow his name to be used in connection with the school, they have not succeeded.

The President of the College has recently withdrawn, and the management has fallen into the hands of a couple of medical men, who are running it simply for what they can make out of it. The college is hurting the standing of the profession with the public, and knowing your antagonism to anything tending to lower our professional standard, I feel sure that you will give us the support of the ITEMS OF INTEREST in frowning it down.

One of the medical men connected with the institution recently made the remark that they would keep that college running, if they had to smash the entire dental profession to do it. Perhaps they will, but we hope to make it very interesting for them.

*M. W. Graff, D.D.S.*

## THE CAREFUL DENTIST.

What do we mean by the careful dentist? Do we mean one who never hurts his patients? No; but he who not only carefully, patiently and thoroughly performs his work, but who, through his knowledge and love for his patient, does all he can for his benefit, even though some pain be inflicted.

When our body becomes diseased, we undergo treatment and take remedies, though we expect pain. Why should we not expect the same when our teeth become diseased? There lies many hidden sources of trouble, requiring expert professional services to disclose. We are too apt to delay treatment till pain forces us to the dentist, whereas, no other part of the body requires more prompt attention to preserve it.

We should do our best to save the teeth, because both health and beauty largely depend on them. Instead of thinking of our teeth as foes, we should regard them as thirty-two special friends, and devote to them our best care. To do this we should not only give them our personal care, but, when necessary, the assistance of the careful, experienced dentist.

It is impossible to enumerate all the troubles to which our teeth are subject, or to specify the various means of arresting these troubles, but the careful dentist will do what is for the best. Generally, this produces little pain; but sometimes the teeth are extremely sensitive; this varies in different people and in different teeth in the same mouth; also under different conditions of general health. Often, the dentist who does not hurt in preparing a cavity for filling is not properly doing his work. If all caries is not removed, disease is still left, and will continue its destructive work. The filling itself is of much importance; if it is not thoroughly packed it will be a failure, though it may appear all right. If the work is properly done it does pay, as thousands can testify. The careful dentist will endeavor to avoid pain and unnecessary failure; for, with skill and care, most teeth may be saved, if the teeth are given proper care by the patient.

*Mrs. L. W. Baxter, Richland Center, Wis.*

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DRUNKARDS IN AMERICA.—The *Journal of Inebriety* estimates the total number of drunkards in America at 1,600,000. There being about 25,000,000 of adults in this country, this means that one person out of every fifteen drinks to excess, and is, consequently, a drunkard. The *Journal* thinks that this estimate is a very modest one, and rather under the mark than above it.

## USEFUL HINTS.

*Dr. H. H. Sullivan, Excelsior Springs, Mo.*

TO SHARPEN PIANO WIRE BROACHES.—After filing down in the usual way, place on your mandrel one coarse emery disk and one fine one with the grits facing each other; adjust mandrel in hand-piece to your engine, now hold the wire to be smoothed down to as fine a point as desired between the disks, and run engine at moderate speed, turning the wire from right to left that it will be true when finished.

ROOT CANAL CLEANSERS.—Take Donaldson's canal cleansers No. 5. After you have broken off the barbed portion and they appear to be worthless, smooth the end nearest the barbed portion and insert them in small wooden handles. You will find them exceedingly useful; having a fine temper they can be bent in any desired shape. Now dip them in a little sandarac varnish and wipe all excess of varnish off. Now wind a wisp of cotton around them, and they will carry any medicine to any portion of the root of a diseased tooth.

Do not wind enough cotton to fill the root tightly when using in the pumping process, especially when using peroxid of hydrogen for cleansing abscessed teeth.

The handles mentioned I make from pins secured at the butcher shop used to pin roasts with. Cut them off proper length, sandpaper and shellac them. I always put a small brass ferrule on the end nearest broach, polish it and then shellac, this gives the instrument strength and adds materially to the appearance. I also find these instruments useful in filling small canals and examining teeth for small cavities.

HANDLES FOR BENCH FILES.—I use ordinary corks; they are light and answer all purposes.

CEMENT SPATULA.—Take an artist's pallet knife with a three inch-blade, and cut it off so it will be one and seven-eighths inch-blade, and you will have an ideal spatula for cements. With this you can thoroughly incorporate the liquid and powder. I use a piece of plate glass  $\frac{1}{4}$  inch thick, 5 by 5 inches, on which to mix cement.

# CURRENT THOUGHTS.

## THE NEW PHOTOGRAPHY.

Never in the history of science has a great discovery received such prompt recognition and been so quickly utilized in a practical way as the new photography which Professor Röntgen recently gave to the world. Already it has been used successfully by European surgeons in locating bullets and other foreign substances in human hands, arms and legs, and in diagnosing diseases of the bones in various parts of the body. It is almost an old story now in its first features, and these seemingly miraculous photographs are easily produced in many physical laboratories, while technical journals are publishing reproductions in their pages. The fact that only a faint idea has yet been gained of the practical possibilities of this discovery is already proven, and it is difficult to keep pace with the astonishing supplementary disclosures.

The most important of these is the application of the new omniscient agent to metallurgy. It has been found that though most metals are apparently opaque to the rays of this strange light or force, yet any internal defects or lack of homogeneity in them are quickly detected and recorded on the tell-tale plate. The sensitiveness and accuracy of the negatives in this respect are described as marvelous.

No two metals are alike under this new test. Lead proves to be almost as transparent as aluminum and wood. Hitherto it has not been possible without a complicated process to test the uniformity of structure of metal work, for instance, gun barrels, iron rails, railroad wheels, or to distinguish at sight the different varieties of iron and steel. All this, it is anticipated, will be shortly achievable by the help of the new photography. It is no exaggeration to say that this would mean the complete revolution of many branches of metallic industry, especially in the manufacture of arms.

To the great astonishment of the experimenters, it was found that metallic objects exposed to Röntgen's rays show in the photographic reproduction all inequalities that exist in the structure of metals, such as fractures and cavities. This quality theorists recognize as being due to the great sensitiveness of the rays to variations in the thickness. All alloys of composite metals—and most of those used in the manufacture of arms are composite—show on the photographic plate whether they are completely

homogeneous throughout, and where and to what extent one metal, for instance, zinc or copper in the so-called steel-bronze cannon, has not thoroughly amalgamated with another. Owing to the intensity of the photographic picture obtained by the new rays, carbon is readily distinguished from iron, and hence it will be possible to recognize the quality of iron or steel. The rays will also probably furnish a simple method of control in the Bessemer process.

The inference from the latest experiments is that nothing is absolutely impenetrable to these strange rays. There are only varying degrees of transparency or opacity. Professor Röntgen took a photograph the other day of a large metal plate which had been broken in various pieces and welded together, and so carefully joined that the lines of fracture were imperceptible under the strongest ordinary light. The so-called X rays made them as plain as day on the photograph.

Professor Czermark, of Graz, has succeeded in photographing a living skull without its fleshy integument. The editor of the *Grazer Tageblatt* offered his head for the purpose. When he saw the result he positively refused to allow the picture to be reproduced or shown to any one except to men of science. It is reported that he has not slept a wink since he saw his own death's head.

I have already mentioned the important fact that these strange new rays are incapable of being deflected by lenses or any substance. Professor Röntgen deduces from this that perhaps the rays move with the same velocity in all bodies and in some all-pervading medium with which the molecules of all bodies must be surrounded. No effect could be observed on these rays by magnetic influence. From which fact Professor Röntgen argues that they differ from cathode rays, investigated by Professor Lenard.

To the question what are these X rays if they are not cathode rays, Professor Röntgen brings forward the hypothesis that possibly their existence may be ascribed to longitudinal waves in the ether. The existence of such longitudinal waves, as apart from the transverse vibrations which account for the phenomena of light, has before now, from theoretical considerations, been suspected by physicians, though there has been no experimental evidence yet brought forward to show their existence. If this should, on fuller investigation, really turn out to be the case, and the X rays of Professor Röntgen are really due to such longitudinal vibration, a great step forward will have been made in the theoretical conception of wave motion.

There are already several claims that Professor Röntgen's

discovery had been anticipated. The photography of the invisible has been accomplished before, but not, Professor Röntgen protests, by his method. The most remarkable instance was an experiment by Professor Zeugen in 1885. He focused Mont Blanc in an ordinary camera toward evening from the window of a hotel at Geneva. He waited till he could not discern a vestige of the mountain through an opera-glass, then opened the apparatus and left the plate exposed till midnight, when he found he had obtained an excellent picture. He explains the process thus :

It is clear that in an electric discharge from mountain tops toward the heavens above them the mountains are negative poles, while the clouds represent positive poles. Now, the cathodic light thus produced is too weak to light up the mountain in the middle of the night so as to make it visible to the human eye ; but the strata of ice and chalk embedded in it are excited to lively fluorescence and phosphorescence, and thus are very sensitive to photographic plates, which receive the picture in the darkest night.

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### HOW GOODYEAR BECAME A RUBBER INVENTOR.

The ruinous failure of the earliest American rubber manufacturers, arose from the fact that they began their costly operations in ignorance of the qualities of the material which they had to deal with. No one had discovered any process by which India rubber once dissolved could be restored to its original consistency, and the importance of this item was overlooked till many men had been ruined.

It was in the year 1820 that a pair of India rubber shoes was seen for the first time in the United States. They were covered with gilding, and resembled in shape the shoes of a Chinaman. They were handed about in Boston only as a curiosity. Two or three years after, a ship from South America brought to Boston 500 pairs of shoes, thick, heavy and ill-shaped, which sold so readily as to invite further importations. The business increased till the annual importation reached half a million pairs, and India rubber shoes had become an article of general use.

The manner in which these shoes were made by the natives of South America was frequently described in the newspapers, and seemed to present no difficulty. They were made much as farmers' wives made candles. The sap being collected from the trees, clay lasts were dipped into the liquid twenty or thirty times, each layer

being smoked a little. The shoes were then hung up to harden for a few days; after which the clay was removed, and the shoes were stored for some months to harden them still more.

Nothing was more natural than to suppose that Yankees could do this as well as Indians, if not far better. The raw India rubber could then be bought in Boston for five cents a pound, and a pair of shoes made of it brought from \$3 to \$5. Surely here was a promising basis for a new branch of manufacture in New England. It happened, too, in 1830, that vast quantities of the raw gum reached the United States. It came covered with hides, in masses, of which no use could be made in America; and it remained unsold, or was sent to Europe.

Patent leather suggested the first American attempt to turn India rubber to account. Mr. E. M. Chaffee, foreman of a patent leather factory, conceived the idea, in 1830, of spreading India rubber on cloth, hoping to produce an article which should possess the good qualities of patent leather, with the additional one of being water-proof. In the deepest secrecy he experimented for several months. By dissolving a pound of India rubber in three quarts of spirits of turpentine, and adding lampblack enough to give it the desired color, he produced a composition which he supposed would perfectly answer the purpose.

He invented a machine for spreading it, and made some specimens of cloth, which had every appearance of being a very useful article. The surface, after being dried in the sun, was firm and smooth; and Mr. Chaffee supposed, and his friends agreed with him, that he had made an invention of the utmost value. At this point he invited a few solid men of Roxbury, Mass., to look at his specimens and listen to his statements. He convinced them. The result of the conference was the Roxbury India Rubber Company, incorporated in February, 1833, with a capital of \$30,000.

The progress of this company was amazing. Within a year its capital was increased to \$240,000. Before another year had expired, this was increased to \$300,000; and in the year following, to \$400,000. The company manufactured the cloth invented by Mr. Chaffee, and many articles were made of that cloth, such as coats, caps, wagon curtains and coverings. Shoes made without fiber were soon introduced. Nothing could be better than the appearance of these articles when they were new. They were in the highest favor, and were sold more rapidly than the company could manufacture them.

The astonishing prosperity of the Roxbury Company had its natural effect in calling into existence similar establishments in other towns. Manufactories were started at Boston, Framingham, Salem, Lynn, Chelsea, Troy, and Staten Island, with capitals ranging from \$100,000 to \$500,000 ; and all of them appeared to prosper. There was an India rubber mania in those years similar to that of petroleum in 1864. Not to invest in India rubber stock was regarded by some shrewd men as indicative of inferior business talents and general dullness of comprehension.

The exterior facts were certainly well calculated to lure even the most wary. Here was material worth only a few cents a pound, out of which shoes were quickly made, which brought \$2 a pair ! It was a plain case. Besides, there were the India rubber companies, all working to their extreme capacity, and selling all they could make. Such were the conditions of the trade when Charles Goodyear visited the New York office of the Roxbury Rubber Company to suggest some improvements in inflating a life preserver manufactured by the company. To his surprise the agent took him into his confidence and explained that the prosperity of all the India rubber companies in the United States was only apparent ; that they needed an ingenious inventor to save them all from ruin.

The Roxbury Company had manufactured vast quantities of shoes and fabrics in the cool months of 1833 and 1834, which had readily been sold at high prices ; but, during the following summer, the greater part of them had melted. Twenty thousand dollars' worth had been returned, reduced to the consistency of common gum, and emitting an odor so offensive that they had been obliged to bury it. New ingredients had been employed, new machinery applied, but still the articles would dissolve. In some cases, shoes had borne the heat of one summer and melted the next. The wagon covers became sticky in the sun and rigid in the cold.

The directors were at their wits' end ; since it required two years to test a new process, and meanwhile they knew not whether the articles made by it were valuable or worthless. If they stopped manufacturing, that was certain ruin. If they went on, they might find the product of a whole winter dissolving on their hands. The capital of the company was already so far exhausted that, unless the true method were speedily discovered, it would be compelled to wind up its affairs.

The agent urged Mr. Goodyear not to waste time on minor improvements, but to direct all his efforts to finding out the

secret of successfully working the material itself. The company could not buy his improved inflator ; but let them learn how to make an India rubber shoe that would stand the summer's heat, and there was scarcely any price which it would not gladly give for the secret.

The worst apprehensions of the directors of this company were realized. The public soon became tired of buying India rubber shoes that could only be saved during the summer by putting them into a refrigerator. In the third year of the mania, India rubber stock began to decline, and Roxbury itself finally fell to \$2.50. Before the close of 1836, all the companies had ceased to exist, their fall involving many hundreds of families in heavy loss. The clumsy, shapeless shoes from South America were the only ones the people would buy. It was generally supposed that the secret of their resisting heat was that they were smoked with the leaves of a certain tree peculiar to South America, and that nothing else in nature would answer the purpose.

The \$2,000,000 lost by these companies had one result which has proved to be worth many times that sum : it led Charles Good-year to undertake the investigation of Indian rubber. That chance conversation with the agent of the Roxboro Company fixed his destiny.

*Commercial Bulletin.*

## PULP PROTECTION IN FILLING TEETH.

*Dr. J. D. Patterson, Kansas City.*

In considering this subject, no reference will be made to pulps which have become exposed or in a pathological condition very near exposure, but to fairly deep-seated cavities in the teeth of patients under twenty-five years of age, which are usually filled without any endeavor to prevent pulp irritation, the operator believing that no considerable trouble will be possible, either from the presence of a filling with the property of conducting thermal changes, or from the irritant nature of filling materials in common use. In this class of cases every observant practitioner has had his attention directed to the number of severe pathological conditions arising in after years from the death of the pulp. Where there is immediate or soon occurring trouble after a filling is inserted on a nearly-exposed or pathological pulp, the removal of the filling and usual treatment bring immediate cure ; but where the death of the pulp comes from no continued irritation, the danger is greater. The patient's attention has not been called to the

tooth till months or maybe years have elapsed, and when from an anemic or diseased systemic condition, the dead remains of the pulp-tissue overcome the healthy function of the parts, the operator, be he wise or skilful in treatment, must often fold his hands, unable to abate the alarming and rapid processes of destruction.

I will attempt to make a diagnosis of these cases, and show why they are so difficult to control. When the irritation to the pulp is slight, as it must be when it penetrates through the wall of dentin, the pulp responds without noticeable pain to the physiological action. If the putrid pulp contents are rapidly forced through the apical opening, the result is an immediate abscess; but in the slower process, from slight irritation, the poisonous matter infiltrates into the surrounding tissue in small quantities and intermittently, and nature, with its wonderful facility for destroying invading poisons, destroys the pathogenic bacteria and absorbs the detritus when it comes in small quantities. In this process, however, the investing tissues become weakened, and weekly or monthly the putrescent pulp matter again comes from the apical opening. Pathologists well know that an abscess voiding intermittently will seek new points of outlet, following more easily the healthy tissue than cicatrized territory. In this way each fresh invasion of pus will prejudice new territory, till irritation after irritation of the parts has placed the surrounding alveolar process and periosteal tissues, often to a distant point, in a weak and predisposed condition. There is no new power left in the tissues to withstand the attack, and at times great loss of process and teeth supervene through rapid inflammation and necrosis.

For pulp protection a variety of methods and materials have been adopted. Gutta-percha easily stands in first place, but it cannot be easily used except in deep cavities, where there is room for a good layer of cement over it, on which to condense gold. Non-cohesive gold in my practice is used for pulp protection almost to the exclusion of all other materials. Those who have been in practice many years cannot fail to notice that the old-time non-cohesive gold fillings, which forty years ago were not universally used, on removal were often found placed over pulps, which were protected only by an extremely thin layer of dentin, and in this position had not caused any uneasiness from thermal changes. If cohesive gold were used for refilling, the pulp was at once affected by hot and cold liquids and cold air, and even resulted in pulp-destruction. The philosophy of this difference in conducting power, between the two forms of gold, is not difficult to trace. In

the non-cohesive filling it is in no way a cohesive mass; cannot be welded together, and when a cavity is filled with layer after layer of this gold, the thermal shock is conducted along the layers and not down to the bottom of the cavity, for there is no intimate connection between the different particles of the different sheets. If you are annoyed with the effects of cold and heat in a cohesive gold filling, and will remove such filling, and without further treatment place over the pulp a pad of non-cohesive gold, as here described, I can assure you the trouble will at once disappear, and that afterward you will treat all deep-seated cavities in this manner.

*International.*

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### EDSON'S "ASEPTOLIN."

Dr. Cyrus Edson, of the New York Board of Health, recently discovered an antiseptic agent for the treatment of consumption and malaria and some other diseases, which has become widely known by the name of aseptolin. It is only a short time since the remedy became known to the public, but it has already been used in various parts of the United States and in Europe. Dr. Edson says that the results obtained thus far are highly encouraging.

In speaking of the remedy to a reporter of the *New York Tribune*, recently, Dr. Edson said:

"I have said it often, but must say it again, that aseptolin is not a specific for consumption, and that it will not restore lungs which have been destroyed. It is a specific for malaria and septicemia. In cases of consumption it follows the lines indicated by nature and has done much good. More than 5,000 physicians in the United States have asked for and have obtained samples of the remedy and are now trying it in all parts of the country."

Dr. Edson has received many letters from medical men in England, France, Germany, Italy, and South America. Twenty cases are now being treated with the remedy in Honolulu.

Dr. Edson added: "Excellent results have followed the use of aseptolin in the treatment of convicts sick with consumption in the prison at Allegheny, Pa., and in the prison at Auburn, N. Y. The disease is greatly dreaded by prison authorities, as prisoners are very susceptible to it, and it seems almost impossible to destroy its contagion in the cells used for long-term prisoners. Dr. O. Sawyer, the physician of Auburn Prison, has reported at length the results of his treatment of a number of cases. The doctor says:

"The first thing we noticed after beginning the treatment

was the increased appetite, next the disappearance of the pain in the chest. Third, the patient would sleep at night without the customary narcotic. Fourth, the total disappearance of cough in most cases, and, fifth, the gain in weight. This gain in one case, that of a colored man, was between four and five pounds in a single week.'

"Those who have used the treatment, without a single exception," Dr. Edson added, "speak well of it, and all agree as to increase in appetite and weight following immediately on its use. A few criticisms have been made of the theory I have advanced to account rationally for the good results effected. From this theory deductions were made which led to the discovery, if such it may be called, of the aseptolin treatment. These critics, who have not tried the treatment and who know nothing of it from a practical point of view, say that aseptolin is not founded on a correct theory. For argument's sake, admit this to be the fact; but if aseptolin cures the sick and restores them to health, theory or no theory, it is valuable, and will prove a blessing to mankind, and a theory will be made to conform to facts.

"Other critics say there is no evidence of cure, and that it takes five years to know whether aseptolin has cured a case of consumption or not. For the sake of argument, admit this to be true; but if aseptolin removes the pain, stops the cough, increases the appetite and strength, stops the wasting and brings back the comforts of health, it does some good. In this condition the sufferer can afford to wait five years to determine the fact of his cure. But if the hectic fever is not stopped, the wasting not arrested, the cough and pain not stopped, the patient won't remain here for five years to learn if he has been actually cured."

The physicians who are using the remedy in various parts of the world are keeping accurate records of the cases where it is being applied and are making reports to Dr. Edson, by whom the reports are tabulated, so that the results may be made known to the public.

*Scientific American.*

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A REMEDY FOR THIRST.—Thirst and great dryness of the mouth in sickness is often relieved by a teaspoonful of powdered gum arabic, beaten thoroughly with a couple of teaspoonfuls of glycerin, to which is added a glass of cold water and enough lemon-juice to make the mixture palatable. The mixture may be taken freely, with great relief to the dryness of the mouth and thirst.

*Medical Times.*

## A DEAD TOOTH.

Dr. Friedrichs, of Louisiana, says : Some say a dead tooth, if the pulp be removed, is better preserved than one with the pulp alive. My experience in thirty-three or more years of practice is that the moment the pulp is destroyed the tooth is limited in regard to its duration ; and also by observation, I know that when the pulp is allowed to remain, as long as that tooth exists it will endure, for I have seen them worn down to the gums. The Almighty would not have placed us in such a position that after a certain period of time an organ that was built up should be destroyed before the period of our demise. He certainly intended that those teeth should last us as long as we lived, and we have plenty of people who have their teeth in good condition till they die. In pyorrhea, I cannot see where condition of the pulp has any effect on the disease. If so, why do you find caries in mouths where only one tooth is affected and no others? Extract that tooth, and ten chances to one not another will be affected. This has occurred to me in my own practice. If the pulp really were the cause of or would induce this condition, everybody would be affected with pyorrhea. Do you find that to be the case? Of course not. You find those lesions in the human body where one man may be affected with a something, but it does not follow that the whole human race is affected. Where you have the pulp irritated, the usual trouble is the reflex condition of the pericementum. If the congestion remains in the pulp, pus is formed and the pulp is annihilated. There is no such thing in the pulp as an absorbent. There is a period of disease. When senile decay steps in, as Dr. Atkinson said, it is want of proper nourishment, and those conditions then follow.

I think all the evidence we have had in the past shows that there is an increasing density of the teeth up to the time that they are lost in advanced years, and that there never comes a time when there is resorption. This has been demonstrated recently by experiment. It has been theoretical heretofore. If I understood Dr. Black's series of papers in the *Dental Cosmos*, there is a gradual increase up to old age. I know from my own observation, microscopically and otherwise, that there is an increase in density in the structure of the tooth, but I know of no time when there is a resorption. Though there is at times a pathological condition apparent where the pulp destroys the tissue. *Dr. Truman.*

## DURATION OF PULPLESS TEETH.

*Dr. Taft, of Cincinnati, Ohio.*

The tooth derives its nutritive supply from the pulp, and it goes on from its primary condition to its perfection (speaking of the permanent teeth) ; but what about it after this period? Is it of any value after the perfection of the tooth? Were it not of value in the economy, Nature would have made provision for its removal. Does the tooth need any nutrition after twenty-five years of age, after it has been entirely calcified? Can any one decide in any given case when the period of perfect calcification is reached? It is reached much earlier in some cases than in others. It is a fact patent to every close observer that the teeth in many instances do not seem to be complete in calcification at thirty or thirty-five years of age. How do we know? Up to this time they have remained in a comparatively deficient condition in this respect. They become more and more dense after this time. Does that increased solidification take place after the pulp is destroyed? Never. What are the constituents of dentin and enamel? Two general classes, organic and inorganic, vital and non-vital, the vital just as important an element as the non-vital. The vital must have supply and nutrition. When its life is taken away, deterioration at once begins, not in the broad sense manifesting disintegration at once, though that comes afterward. The organic portion of the tooth is not nourished as when the pulp is living. Both the dentin and enamel receive their supply from the pulp of the tooth, and when this organ is destroyed this process of nutrition is also destroyed. It will be found that after a pulp is taken away, disintegration and breaking down of the tooth takes place without the ordinary process of decay, simply by a deterioration of the tooth-structure. That, of course, appears on the organic material, and not the inorganic. Often we find a devitalized tooth with a portion of it broken off. The enamel far more readily breaks down, and disintegration occurs wherever a thin edge is left, or where there is an exposed edge or border, because of its weakened condition. That is true also of the dentin, because that has within it a much larger proportion of organic matter. I remember the case of an excellent tooth in a mouth in which all the teeth were excellent, except that the first permanent molar by decay had lost its pulp. There was a large cavity running through from front to back. On that tooth Dr. Atkinson many years ago performed an operation, filling up the pulp-chamber and building up the tooth.

The statement was made that the tooth would last the lifetime of the patient, but it did not. It was a firm, solid tooth, as was its neighbors. That tooth lasted about eighteen years, and did good service, except that about twelve or thirteen years after it had been filled the edges of the enamel began to break away, and about eighteen years after it was filled the whole inner wall broke away. Examination revealed the fact that there was no ordinary decay. It was very slightly decalcified, but there had been such deterioration of the organic portion of the tooth that it was not able to withstand the force that was put on it in mastication and gave way. Within a year the other side broke off in the same manner, showing clearly that there was a deterioration of the structure or character of the tooth that was fatal to it.

*International.*

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Dr. McKellops, of St. Louis, Mo., says: When, in treating the sixth-year molar of a child, if you find a small portion decayed, you find it difficult to put in an amalgam or gold filling; but by putting in carefully an oxiphosphate filling and watching it till the child is fourteen years of age, I defy any man, if the filling is properly prepared and put in, to find a particle of decay there. If you put oxichlorid in a tender tooth, you set up inflammation; but take a little iodoform and glycerin, and place it over the tender pulp, and a little asbestos paper over that, place in your oxiphosphate and let it set, you can then put in any filling you want, and it will not irritate the tooth.

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A SLAP AT THE BACTERIOLOGISTS.—These are useful assistants, but they are tyrannical masters, and the results of a given treatment must, after all, be judged, not in the laboratory, but in the hospital ward and the sick room. A check must be imposed on garrulous bacteriologists who show a disposition to ride the cock-horse among us. We are grateful to them for such assistance as it may be in their power to render to medical science, but we cannot allow them to dictate to us what conclusions we are to draw from clinical investigation. Bacteriological statements are subjects of inference, but clinical observations are facts; facts, too, which concern us more nearly than the interesting, but too often contradictory, deductions which foreign laboratory men foist on us at the point of the scalpel.

*Medical Record.*

## SINGULAR LOSS OF MEMORY.

In a paper read before the Glasgow Medico-Chirurgical Society, by Dr. James Hinshelwood, on October 4th last, a more than usually interesting case was discussed, of which we give a brief outline.

A man aged fifty-eight had always enjoyed good health, with the exception of occasional attacks of bronchitis in winter. He was a man of education, and of recent years had had a large amount of mental work, and just before the beginning of his present visual trouble, had had considerable mental worry.

He first came under Dr. Hinshelwood's notice on August 29th, 1894, and gave the following history :

About one month before, he was startled to find that one morning he could not read the French exercise, which a pupil gave him to correct ; he then took up a printed book to see if he could read it, and found that he could not read a single word, and in this condition he consulted Dr. Hinshelwood, who examined his visual acuity with the test types, and found that he could not read even the largest letters of the test types, though he said that he could see all the letters plainly and distinctly, but could not tell what they were ; he made the most absurd mistakes, and only very rarely, after guessing several times, did he hit on the proper name of the letter. With figures it was very different, the patient could read even the smallest figures on the test types, so that evidently there was no lowering of his visual acuity. His inability to read was thus manifestly not due to any failure of his visual power, but to a loss of the visual memory for letters. The page of a printed book appeared to him exactly as it appears to a person who has never learned to read. He sees each individual character distinctly enough, but the character is no longer a visual symbol, as he no longer remembers the special significance attached to it. His difficulty with written characters was equally well marked, and it was the same for Latin and Gothic characters. He could not be tested with musical notes, as he was entirely ignorant of music. To put it briefly, he had lost the visual memory of all the printed and written characters with which he was previously familiar. He could, however, write with perfect fluency and ease to dictation, though afterward he could not read what he himself had written. No other mental defect could be found on the most careful examination. He spoke as fluently as ever, nor had he ever experienced the slightest difficulty with his speech since the

beginning of the attack, nor was there any defect of memory apart from the loss of memory for the visual symbols of language.

On examination of his visual fields with the perimeter there was found loss of the right half of each visual field, *i. e.*, he had right lateral homonymous hemianopsia. No other defect could be found; his general health was good, and, with the exception of atheromatous vessels, there was no evidence of disease present on the examination of all his organs.

The patient has been under observation during the last thirteen months, and was last seen on September 27th, 1895. His general health has remained good, no new mental symptoms have arisen, though he admits that his memory is not as good as formerly and that this is particularly noticeable in the case of proper names. The right homonymous hemianopsia remains the same. With regard to his power of reading there has been a slow, but steady, improvement during the last six months. After a period of mental rest he was advised to begin to learn to read; he began by learning the alphabet and spelling through a child's primer daily, so that at last he could read, but only slowly and laboriously, spelling out letter by letter like a child, in the alphabet at the beginning of his primer, he has underlined the letters which gave him difficulty, putting a double line below those which gave him most difficulty. His behavior is that of a child learning to read. Meeting with the letter F for example, he hesitates, begins to run over the letters from A to F, he then recognizes the letter as F. However, giving him plenty of time, and with many mistakes he is now able slowly and laboriously to spell out printed matter; his great difficulty now is to read written matter, which is perhaps due to his having devoted himself entirely to the perusal of printed matter.

His power of reading figures remains as before, as also his power of writing to dictation, though he does not spell as correctly as before, and his handwriting, though quite legible, is not as good as it was previous to the onset of his word blindness; the patient seeks to explain this by lack of practice in reading and writing during the past thirteen months, and no doubt this is an important fact, but another factor is to be found in the word blindness, the patient being unable to read what he himself had written, and therefore gaining no help from vision in the spelling of the words and the formation of the letters. He is much in the same position as a man writing with his eyes shut.

## CATAPHORESIS FOR OBTUNDING SENSITIVE DENTIN.

*Dr. H. L. Ambler, Cleveland.*

Cataphoresis means "the movement of fluids and the substances they hold in solution, from the positive pole of electrodes conveying a continuous current in tissue (dentin included) toward the negative pole." This method can be applied in nearly all cases, and where the sensitiveness is not overcome by cocain, we use oil of cassia in which has been thoroughly incorporated a trace of thoroughly pulverized soda sulfate. In unusually dense dentin the 25 per cent solution of cocain hydrochlorate penetrates slowly, but the action and penetration may be increased by adding a trace of soda sulfate, thus making the conducting power of the liquid greater. During action on the dentin, the current carries with it almost any fluid exposed to its action under proper conditions, that is, any local anesthetic which is a conductor of electricity, or can be made one, is driven or forced into the dentin, depending on the character of the obtundent, porosity of dentin, voltage and length of time it is applied, a high voltage requiring less time, with the same obtundent, than when a low voltage is used. Sometimes the voltage can be carried to twenty or thirty in five minutes without discomfort to the patient. At other times it can be carried to forty volts in ten minutes, the latter is as high a pressure as we have ever found necessary to use in obtunding sensitive dentin, but when we attempt to bleach devitalized teeth, a much higher voltage becomes necessary. We have only spoken of volts as shown on the index of the "selector," invented by Dr. Gillette and Mr. George M. Wheeler, as they constitute our guide, when no milliampère meter is used. Extreme vascularity, as found in young patients, and those of lymphatic temperament, will be found to yield more readily to treatment than dense dentin in old teeth, or those of bilious temperament. Large tubuli are more easily and quickly dehydrated than small; large tubuli admit the driving down into them of drugs by electrical action much easier than small ones. Dryness of a cavity is essential, and when the rubber has been applied to the tooth, and the cavity wiped with absorbent cotton, then it is fairly dry, and it is not necessary to attempt further dessication before using the cataphoretic treatment, neither should we do so in extremely sensitive teeth, nor for very nervous patients; because when we apply alcohol as a dehydrant, the sudden cold produced by its rapid evaporation causes pain which might have been avoided, even if it does only last for a

minute; still we have been led to think that many times where alcohol was used before applying cataphoresis, the cataphoretic action was more rapid, as the medicament could be forced into the tubuli quicker and easier than when dehydration was not practiced. We are well aware of the value of dehydration, produced by absolute alcohol and a current of warm air, as an obtundent, but we did not use this process before applying cataphoresis; we simply wiped the cavity with a pellet of cotton saturated with alcohol; though used in this manner, it does not produce much obtundent effect.

The degree of success in obtunding does not seem to depend on the location or size of the cavity, as with some other methods; in a small cavity there can be no danger of injuring the pulp, and in a large cavity, where the pulp is nearly exposed, the medicament acts as an anesthetic, and after ceasing to apply it, in a short time the pulp returns to its normal sensitiveness, and it is the same with sensitive dentin which has been obtunded; of course, the time required largely depends on vitality, physical characteristics, length of time applied, kind of obtundent used, etc. Results vary, and when cutting rapidly you are liable at any time to pass through the obtunded portion, but should this happen, a second application can be made. Experiments have shown that the alternating current will accomplish cataphoresis, but it does not work as quickly or penetrate as deeply as the continuous current, because of the interrupted or wave-like current in alternation; the continuous (direct) current is the most efficient and economical, but the expense connected with either is small. The electric current alone does not produce anesthesia at either terminal, but when a proper medicament is placed in the cavity, the current diffuses it through the tooth tissue by the anode (positive pole), but not by the cathode (negative pole). The negative pole is so related to the positive pole that the current passing through the tooth, from the positive pole to the negative pole, and thus obtunding, is accomplished at the point to be operated on. The excavating should be commenced as soon as the positive electrode (platinum) has been removed from the cavity, and if you cut through the desensitized layer before the cavity is properly formed, and the patient will not allow you to proceed, then another application can be made and another layer of dentin desensitized, thus enabling you to complete the excavating without pain. By applying for a sufficient length of time we think any cavity can be obtunded.

We are using the Fractional Volt Selector (manufactured by the Electro-Therapeutic Company, 32 East Twenty-third street,

New York) attached to the one hundred and ten volt continuous current. The selector is adapted, when made, to either the one hundred and ten volt continuous or alternating current; also the arc lighting circuit can be used by putting in a transformer to reduce the voltage before it reaches the selector, which is reliable and delicate as a mechanical apparatus; we have tested the voltage with a volt-meter, and find it to be satisfactory. The volt-meter is used to determine the difference of potential between any two points of a circuit by connecting its terminals as a shunt to the circuit between these two points. The selector regulates the voltage of electric current, and accomplishes with exactness a positive control of these currents in very small gradations at the will of the operator, with no sudden increase of voltage, but a continuous, smooth, increase of voltage, imperceptible to sensitive nerves; it also controls the current from a battery in the same manner as when using the incandescent or arc lighting circuit.

Most batteries are not of sufficient strength for cataphoretic work on dentin, but a special one for dentists, physicians and surgeons is manufactured, which gives a continuous current from one up to eighty volts. To increase the strength of ordinary batteries, a large number of cells would be necessary, thus making them expensive. A switch has been added to the selector, which enables the operator to increase the volts from forty to eighty. As first manufactured, only forty volts could be given, but it was found necessary to have more where patients present an unusual resistance to electricity, or when used by physicians and surgeons on parts of the body where the resistance is great. A high pressure of the electric current is necessary to drive the obtundent or medicine into the tissues through thick flesh deeply to the seat of affected parts, and for forcing a bleaching fluid or obtundent through sound dense dentin. Cataphoresis is a recognized scientific process for administering remedies for many diseases, and for surgical operations. \* \* \*

A 25 per cent solution of cocain hydrochlorate, containing 2 per cent boric acid, makes a good conducting media and a stable solution, and good results can be obtained by its use in obtunding sensitive dentin. We have never seen any unpleasant or toxic effects from the use of cocain in the teeth, and it seems safe to use as far as its effect on tooth structure, pulp, or system is concerned. Cocain imprudently administered by other methods to patients of extreme susceptibility, or to hysterical persons, and those in whom the brain or circulatory system is not in a normal condition, may produce general symptoms more or less grave and

frequent. In poisoning, from its use, give hypodermic injections of whisky, ether or atropia, and inhalations of amyl nitrit. \* \* \*

Dr. Gillette, to whom great credit is due for having made this process practical, says: "That patients often confuse the sensations of the current with pain."

After the application has been completed, when very sensitive to the current, we turn the index needle on the selector back to "O," and then remove the sponge electrode first, to prevent shock, but generally these precautions are not necessary, neither are they if you use the latest improved selector. The running of elevators connected with your current does not produce any appreciable difference, and we have not found it to be detrimental. The electric current is used successfully on the mucous or cutaneous surface for surgical operations when the voltage is controlled by the selector, and the electric plugger, mouth lamp, cautery, root drier, etc., will probably be adapted to this instrument.

*Ohio Dental Journal.*

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Dr. Black says: Whenever we admit the fluids of the mouth to a pulp chamber for twenty-four hours, we have injured that tooth for all time. It is now well known that when the pulp must be removed, if it be removed by the direct operation by the dentist, and the fluids of the mouth are not admitted at all, that the color of that tooth is maintained, if the filling be a perfect one. It is far more important that a filling be perfect in a pulpless tooth than in a tooth that has a living pulp. The deterioration and weakening of the dentin seems to be in some way connected with the admission of the fluids of the mouth to that dentin. The discoloration is dependent on that, and wherever we get this discoloration I have found the weakened condition of the tissues of that organ. Wherever the tooth is bright, we find its strength good.

It is a mistake to suppose that light-colored teeth are weak teeth. They are not; they are the strongest. Whenever we find them deteriorating in color, we find them deteriorating in strength, and the management that retains the color seems to retain the strength, whether it be in teeth that are wearing down or in pulpless. That very admission of the fluids of the mouth to the tooth is the cause of the discoloration and the weakening of the tooth. During treatment, the greatest care should be exercised not only to prevent abscess afterward, but to preserve the strength of the tissues of the tooth as well.

## AIR-CHAMBERS.

*Dr. L. P. Haskell, Chicago.*

Writers still continue to assert the necessity for, and describe the methods of, making air-chambers in full dentures. It seems as though an experience of fifty years, exclusively in prosthetic dentistry, dating back to the first "suction" plates, ought to demonstrate whether air-chambers are a necessity in full dentures.

My preceptor, Dr. Hanson, of Boston, so far as I know, made the first suction plate, I think in the year 1844. The impression was taken in common beeswax; the die made of tin, and the plate fitted to the entire palate. The adhesion was such that he tested its force by soldering a hook to the plate, attached a wire to it, and to this suspended a pail of water, and piling other weights on it, the patient lifted and held the whole. All plates were thus made without air-chambers, which were not introduced till several years later, and were known as the "Gilbert" air-chamber, the same as now used.

For more than twenty-five years I have discarded air-chambers in the full denture as unnecessary, and often very detrimental, in rubber, gold, aluminum, and the heavy continuous-gum work, in flat cases, high arches, ridges hard or soft, and no ridge at all. On my shelves are hundreds of models of every conceivable shape and condition, on which dentures have been made, and all working successfully, and yet not an air-chamber in one of them.

There is one fact in connection with the upper jaw that seems to be largely overlooked. The center of the palate in 99 per cent of cases is hard, and is the only portion of the jaw which never changes or yields to pressure. As the alveolus gives way, the plate will rest there and rock, and interfere seriously with its adhesion and stability. In metal plates I make a "relief" by covering the hard center with a thin film of wax, chamfering the margins to a thin edge, or flush with the model.

Now, if there be an air-chamber, its anterior and posterior margins must, of necessity, rest on this hard center, and in the course of time the plate is rocking and the air-chamber is worse than useless.

There is a small per cent of cases where the center of the palate is soft, and there is usually a slight crevice. In such cases I make no change at all, but fit the plate closely to the entire surface, making sure that its margin fits snugly into the crevice.

On trying the plate in the mouth I do not ask the patient to "suck it up," but am confident that the adhesion will be all right if I see no air-bubbles escape at the rear when pressing the plate with the finger in the center, having previously wet the palatal surface; and this, too, in view of the extra expense involved in making-over a continuous-gum set, if the adhesion is not sufficient.

I find many dentists have discarded air-chambers and other appliances for suction; and they are satisfied with the results. These unsightly objects in a metal plate and the unnecessary thickening of a continuous-gum denture can be entirely dispensed with. In rubber sets I bur with the large cone bur a portion of the rubber from the palatal surface.

In the worst case for which I have made a denture in a practice of fifty years, I have no air-chamber. On the right side a portion of the bone was removed on account of disease. The remainder of the ridge is thickened flexible membrane; the center of the palate is enlarged, quite prominent. I raised the model slightly over the right side where it is hard; raised it as usual over the hard center, swaged an aluminum plate, and attached the teeth with rubber. The denture is one inch long in front to restore contour of face. The only favorable condition of the mouth is the retention of all the lower teeth. The patient told me after wearing the plate eighteen months he often forgot he was wearing artificial teeth. Had previously seven sets made by different dentists, none of which had been satisfactory. If an air-chamber is not needed in such a case, where is it a necessity?

*Cosmos.*

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## IS THE BACTERIOLOGICAL THEORY WANING?

We have observed, during the last year, that much has been said by the most eminent of authorities tending to express doubt as to the invulnerability of the germ doctrine as the sole cause of disease. The ultra germ theorists are dropping out of sight and allowing the more rational facts of climatic and atmospheric changes as producers of disease full sway.

It was not long since a simple catarrhal inflammation of the nasal passages, commonly called a "cold," was considered the result of bacillary invasion. We now are called on to consider the influences exerted by draughts, sudden changes in atmospheric temperature and other unhygienic conditions, reverting to the

former days when these surrounding elements were looked on as the sole authors of disease.

But our forefathers were not always so far out of the way in their reasoning, and there were no greater fools in a century back than sometimes exhibit themselves now. The one great failing with the individual members of the profession of the nineteenth century is the inordinate desire for notoriety and the consequent tendency it exerts for rushing forward with every new theory till it becomes a veritable fad.

Fads are often instructive and usually safe enough if not carried to excess. So it is with the germ doctrine. We have bacilli and bacilli—innumerable quantities of them—growing in such situations as best support them by favorable environments. Probably many of them produce toxins. Many are harmless. Possibly some may even be termed curative by their antagonism for those that are virulent. But all this does refute the fact that the bacillus, of whatever genus he may be, cannot find in the purely healthy human blood-cell a favorable field for his cultivation and growth. That must be sought for in the degenerated corpuscle.

We must study, then, the various causes which influence the degeneration of the blood-cell if we would get at the real prime mover in etiology. These are, undoubtedly, controlled by the sensory nerves acting through outside stimuli and explains vastly better how the production of a "cold" may arise from draughts, bad air and warm winter storms.

It is, however, among the contagious diseases that the claims of the germ theory seem to have their strongest hold for recognition; but when one stops to think that pure air and thoroughly oxygenated blood are the best preventives for contagious diseases, it will be readily understood how we may find specific germs early in a given disease without their proving more than symptomatic phenomena.

*Times and Register.*

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A gentleman came to me with an abscessed lower bicuspid broken off on the lingual surface. I cemented in a platina pin and then built up with amalgam. My crown was then easily fitted and cemented on, making a perfect tooth. The gentleman, who was a wealthy coffee grower, did not object to pay the price asked, and has been instrumental in sending me much work. It is only within a short time that crown-work has been introduced here. Half the population never heard of a filling of either gold or amalgam.

*Luella Cool, Quezaltenango, Guatemala, C. A.*

## PREPARATION OF PULP-CAVITY AND CANALS.

*Dr. J. Foster Flagg, Philadelphia.*

Pulp-cavity work necessitates the entrance into the pulp-cavity, and this must be affected through at least a partial devitalization of the pulp; if this has been the outcome of other than medicinal application, the methods of entrance are various from only two practical considerations: First, removal of filling, naturally presupposing such to exist, and entering pulp-cavity from cavity of decay, recognizing difficulties of canal work and endeavoring to overcome them; and second, ignoring all previous considerations, and operating with the recognition only of the pulp-cavity and canal requirements, making such entrance as shall eventuate in a "tap," with all its advantages both for present and future possible complications.

But if, on the contrary, such pulp-irritation exists as to demand its devitalization, there is probably no other application as yet more universally resorted to than some combination of arsenic.

It is in connection with these that I have long combated one consideration which, from constant mention and frequent discussion, I hold to be yet almost universally regarded as of much importance, and this is the length of duration of the application.

Twenty-four to forty-eight hours, and by some even a week, are spoken of as though they were alike productive of good and preventive of undesirable results.

For good results I have, for more than thirty years, advocated the continuance of arsenical applications till the desired result was accomplished regardless of any five hours or five days or five weeks or five months (if circumstances should require it), in the full faith that length of duration of application was of no importance, and that in fully-formed teeth (and I presume no one would ever risk making an arsenical application in any others) no undesirable sequences would ever follow.

As proof of this I had, in years long gone by, ample opportunity for following the frequent applications of arsenic which in those days were made for the obtunding of sensitive dentin, and which, having devitalized the pulps, had been the means of quieting all trouble till, in process of time, these pulps had putresced and had induced peridental irritation from evolution of mephitic gas, precisely as they would have done had they been devitalized in any other way.

Following such hintings I was obliged to abandon all time

considerations as associated with arsenical applications, and have thus been enabled to make all pulp-cavity work, dependent on these, in complete consonance with my patients' or my own convenience.

In this wise I always prefer that weeks rather than hours shall be the length of duration of applications; and so it is that when serious pulp-trouble unfortunately antecedes arranged summerings or other long absences from home, applications can be made which will effectually preclude any probability of toothache during such times, and which will, most probably, bring the tooth, on return of patient, in excellent condition for thorough and painless treatment.

I urge the need for proper placing of the arsenic, the precluding of pressure, the maintenance of position, and the prevention of leakage.

With these views it becomes not only undesirable, but culpable, that wax, cotton with sandarac or other gum varnishes, or even gutta-percha or any other than the three coverings mentioned should be used, as no others permit the secure and proper utilization of arsenical applications.

Supposing complete devitalization has been effected, pulp-cavity work becomes simple and usually easy, as nothing is indicated except the obliteration of the walls of the pulp-cavity; by this we have the mouths of the canals defined and the bulbous portion of the pulp removed, and now the trouble begins.

It is regarded, I believe, as of first importance that all the pulp-structure should be removed, and to this end scores of pages in our journals and days of discussion in our societies are given to the methods and instruments for the effecting of this purpose, all having in view the following of every canal to its apical end, and some asserting positively that they always attain this "all-important" result.

I not infrequently meet with canals whose entire length I feel it equally imprudent and impossible to explore.

More than this, I am cognizant of roots, the canals of which I know cannot be followed with the teeth in the hand. How much less, then, would this be possible in the mouth? In fact, this is just the barrier which prevents belief in any statement beyond respectable ability as associated with canal work.

Therefore, as in a large proportion of canals it is comparatively easy to go to the very end, I regard, as of first importance, that the apical foramen shall not be passed, and, above all, not enlarged.

That it should not be enlarged is because just in proportion as this foramen is normally small—even at its smallest—so is it possible to make a good canal filling whether that filling be of gold or of inspissated or even merely fluid medicament; and, inversely, every enlargement of this orifice, however trifling, in equally just proportion renders it less possible to make a perfect filling of long continuance.

I shall ignore the whole question of medicating through an enlarged foramen, as such practice could only be indulged in abscess without fistula, and, in my opinion, even then would be bad practice.

My experience has taught me that perforation of the root is most frequently a result of attempts at enlarging and following canals in the determined work of removing every particle of pulp-tissue; and I would ask which is preferable, that a portion of pulp-tissue remain or that a root be unperforated?

A portion of drill should not be broken off and left in a canal. Why should these broken drills be gotten out? This is a long story which must be shortly told. It is not that of themselves they would do harm, but that they obstruct an open canal.

Who has not experienced the giving of almost immediate relief to teeth so tender that it hurt even to look at them, and that seemed a foot, aye, three feet, longer than any other, so soon as the last portion of obstruction was removed from the canal? and how almost utterly ineffectual are efforts, frequently, till this has been accomplished?

Just here is the battle-ground between those who believe that if every particle of pulp-tissue is removed and the canal is filled with an impervious and indestructible material, no further trouble will ever come, and, as it is expressed, "the work is thoroughly done and will last for life," and those who have no faith in such belief, and who, on the contrary, hold it as much more thorough to try and fix things so that they will remain fixed, if, fortunately, no trouble comes, but that there will also be ample preparation for future relief in case exigencies demand it.

But I should remove every possible portion of pulp.

No one will deny that just in proportion as this is done, so it is reasonable to expect success. Yet, there are plenty of cases of but very partial removal of pulp which have given successes of remarkable duration.

And I also hold that because of the possibility of doing much with antiseptics to preclude any likelihood of putrescence of remaining portions of pulp, and of the ease with which arrange-

ments for venting and future purifying of pulp-cavity and canals can be made, it is equally unwarrantable to take any risk which could, by any possibility, eventuate in irremediable injury, for the purpose of accomplishing so comparatively unimportant a result as is absolute pulp-extirpation.

Viewing this work of canal entrance and cleansing as very important, I desire to refer to the suggestion of Dr. J. R. Callahan, as presented in his paper of July, 1894, in which he advocated the opening up of canals by means of "50-per cent aqueous solution of sulfuric acid."

After a year's experience of this method I can speak of it in terms of unqualified approval, and say that I regard it as the step in advance, in connection with canal work, which has been given us during the past twenty-five years.

Not only in fine, tortuous, and ordinarily inaccessible canals does this process make easy much that would be both difficult and dangerous, but it affords the most prompt, the most efficacious, and the most satisfactory method of entering, cleansing, and beautifully preparing the largest and most accessible canals.

I would call attention to his "pumping motion" of using the probes, both small and great, as a decided improvement over the dangerous rotation and twisting motion by which alone drills or broaches can be made available, for by this modification the danger of breaking probes in canals is almost entirely abrogated.

I have found that there is yet danger of this if steel probes are used, as these in time become corroded by the dilute acid. I also find that electro-plated probes soon lose their gold, but with iridium-platinum and platinum-gold wire probes I have had comfort in doing and demonstrating this kind of work, for which I would tender Dr. Callahan hearty thanks.

*Cosmos.*

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The calculation of percentage solutions is always based on the number of grains of water in a fluid ounce. The exact weight is four hundred and fifty-five grains, and the simplest way is to multiply this number by the percentage desired. In other words, we take one grain of the drug for every hundred grains of water. Thus to obtain a four per cent solution, we multiply four hundred and fifty-five grains by four per cent, which gives eighteen and two-tenth grains, or, roughly speaking, eighteen grains to the fluid ounce of water.

*Medical Brief.*

## CHRONIC ABSCESS.

*Dr. M. L. Rhein, New York.*

The same principles that apply to the treatment of the disease in the acute form hold good here, except that, if possible, a more thorough form of procedure is necessary. In the treatment of chronic abscess, the first requisite (as it should be in all diseases) is the making of a thorough diagnosis. By that is meant (in this disease) so thorough an examination of the gums, roots, and all the adjacent parts, by means of probes, electric light, touch, etc., that a very clear understanding is obtained of the pathological conditions from an anatomical standpoint.

Having these conditions clearly outlined, it is folly to pursue any preliminary treatment of such a tooth. Our object should be to eradicate as rapidly as possible every vestige of diseased tissue, and then allow nature to close the wound.

The first step is necessarily the thorough exploration and cleansing of the canals to their very end. No obstacle in the shape of prior fillings or treatment should be allowed to interfere with this operation. Having thoroughly accomplished this object, no further benefit can be obtained by internal treatment; so that it is generally wise to fill such a canal at the first sitting, if it has been cleansed to its very ends.

In all forms of chronic abscess, there is present caries of the outer periphery of the end of the root, as well as of the alveolar plate in which the root is imbedded. As long as any necrosed bone is allowed to remain, it will be impossible to effect a permanent cure. Surgical interference is logically the only resource at our command.

The greatest criticism that can be passed on us as a profession, in treating diseased conditions of this nature, is that by the minute character of the daily work in which we are engaged, when we come to operate on diseased tissue we have a strong inclination to err by being too conservative in the scope of our operative interference.

If we desire to cure chronic abscess, we must throw aside all that delicacy of touch which is our daily pride in ordinary dental operations. That we may leave behind no diseased tissue we must follow the example of the general surgeon, and enter freely into the zone of healthy bone and tooth structure.

The incision should be made sufficiently large, so that by means of sharp burs in the dental engine we may readily remove

an ample sufficiency of the bone in the diseased tract. The most efficient method is to take the ordinary fissure-drill in the dental engine (the sinus having been enlarged by trephines or otherwise), pass it down the tract along the side of the diseased root low enough toward the crown of the tooth to be certain that you have passed into the healthy tissue, and there, by means of the drill, amputate that portion of the root which is necrosed.

Some times this is surprisingly easy, while in others it is difficult. What ever obstacles may have to be surmounted, if the tooth is one that is to be preserved in a healthy condition, this is the only safe method. Some times it will be necessary to place the patient under the influence of a general anesthetic, especially where it is necessary to bur away the diseased portion of the alveolar process, that the end of the amputated root may be removed.

A common mistake of dentists is to look on this operation as something beyond their scope, and to fear the treading on what they might term dangerous surgical ground.

It would surprise many who are unacquainted with this operation to discover what a simple affair it becomes after they have amputated the ends of a few roots. No one is better constituted to perform such an operation than a good dentist, and in no place are there such facilities for properly performing the operation as are found in a properly-equipped dental office.

The most difficult forms that require surgical interference are those which have no external opening, but from time to time visibly demonstrate that something serious is amiss. I refer specially to those known as "blind abscesses." The internal treatment of the roots having been performed as described, it is necessary to make an artificial sinus directly to that portion of the root where we wish to sever it from the main body of the tooth. If no general anesthetic be administered, the gum at this point should have injected into it about ten minims of a 4 per cent freshly-prepared solution of the hydrochlorate of cocain. A trephine rapidly revolved in the engine will very quickly and almost painlessly effect the desired result. This newly-formed sinus can then be enlarged most readily by means of a crucial incision made by a heavy scalpel, and the root reached by means of a sharp cross-cut inverted cone bur. The remainder of the operation is similar to what has been described.

Another method of producing an enlargement of the sinus, either if it be freshly made or an old tract, is to pack it solidly with a tent of cotton dipped in aromatic sulfuric acid, allowed to

remain there for twenty-four hours. This is by no means as desirable as immediate surgical interference, as it is not only productive of considerable pain, caused by the swelling of the tent, but the destructive effect of the aromatic sulfuric acid on the soft tissues is very detrimental to a prompt closure of the wound.

In teeth with more than one root the amputation of the entire root affected by the disease is often to be preferred to the risk of leaving behind some necrosed tooth-substance. The end of the stump can be nicely smoothed and hermetically closed with an amalgam filling, which at a later period should be polished.

In pyorrhea of all kinds, we meet with many molars where the roots have become entirely denuded. This is especially true of the palatal roots of upper molars, and the pyorrheal condition has for a long time been complicated with abscess. To remove the palatal root of such a tooth has become frequent with me. I have yet to see the first case where the operation has not succeeded in permanently tightening these very loose teeth.

After the roots of such teeth are filled, the removal of such a palatal root is wonderfully simple. The parts are all exposed, and it takes but a few revolutions of the bur to amputate close to the crown, filling the end of the stump with amalgam, and later polishing the same.

Summarizing the treatment of chronic abscess, the same course should be pursued in the canals of the teeth as in the acute stage, at the first sitting, if possible, simply for the purpose of hermetically sealing the interior of the tooth. The diseased tissue is then to be entirely eradicated by surgical interference through an opening in the gum over the root, and if this be effectively accomplished, the abscess is radically cured. *Cosmos.*

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## TEETH OF OLD AGE.

*Dr. Black.*

It is a fact that the teeth become more dense and their specific gravity becomes greater from youth to old age; but this difference is not great. It is a difference that requires the finest powers to demonstrate. The increase in strength is not very great. The difference between teeth is not very great, but it is certain. Follow those differences and you will see. Take the teeth of a young child, and you find average density; take the child in the teens and then in the twenties, and you find an increased density;

then up to thirty there is slower increase, and from thirty to forty or forty-five the increase is very slight. From forty-five to sixty the increase in density is greater again. This is the way in which this has developed itself in my experimental work. I understand that Tomes is now repeating this work. I expect that he will practically substantiate these results, though not precisely, for no two sets of teeth taken from among one hundred persons will give the same results. The difference in density of the teeth of the same person is almost as great as the differences in the teeth of one hundred persons.

Of course, the moment the pulp is dead the increase of density stops. This increase of density occurring in old age or in persons past middle age shows very plainly that the teeth require nutrition throughout life. In teeth that are worn down the pulp has receded, and the enamel has receded, and when it is worn away the strength of the dentin is impaired in proportion to the recession of the pulp. That wearing away of the teeth that we have come to regard as normal produces an abnormal condition of the tissues of the dentin. That tissue of the dentin has lost its vitality, fluids are admitted to the dentinal tubes, and that dentinal tissue becomes impaired and its strength is gradually lost in perfectly sound teeth. This is shown very clearly by experiments. Wherever we have a tooth that has lost its pulp and the vitality of the dentin is gone, and that tooth begins to show a discoloration, there we find that the strength of the dentin is impaired. When we come to test its strength, with the dynamometer, we find that the strength is impaired. We find a peculiar disposition of the enamel to chip off from the dentin. It is much more liable to be broken away. In the tooth that has its pulp and its proper nutrition, this parting from the dentin is not observed. This difference became very marked in this class of experimental work, all of which goes to show the value of the dental pulp, not simply in youth but throughout life. The breaking away and the causes of that breaking away seem to be well shown in this class of experimentation. The pulp is important, not only in youth but continually thereafter. As a person grows older its importance may be diminished, but it is still important, and it seems to me, that if we can do anything to prevent the wearing down of the tooth, it becomes our duty to do so. We can build up the tooth with platina, thoroughly annealed and malleted, and we can make it much harder than hammered cast gold. We can make it stronger than the gold that we put through our rolling-mills and make into plates.

## AMALGAMATING GOLD SECTIONS INTO TEETH.

Coincident with the introduction of the porcelain process of filling teeth with sections of porcelain, I also practiced the art of substituting gold and other metals in the place of porcelain on the grinding surface of the teeth. When the cavity is shallow and greater toughness is required, gold will be the most admissible. The process is essentially the same as with the porcelain. Platina foil is burnished or swaged into the cavity of the tooth to secure an impression, which forms a matrix or mold; then, by fusion, gold or any other suitable metal may be run into the matrix to form a solid section or plug. When completed this corresponds to the lost portion of the tooth. The fusing of the metal may be done by means of the ordinary blow-pipe. In the course of my experiments I have found that after the gold has been molded into a section, it is advantageous to grind off the major portion of the platina lining; this exposes the surface of gold and presents a condition more favorable to unite with the amalgam. The cavity is first lined with a thin coating of amalgam, then the section is coated with a small amount. When it is ready to insert, a slight malleting will drive the section to its proper adjustment and force out any surplus amalgam. Floss silk is used to tie the section in all proximal cavities and hold it while the amalgam is hardening. The section and the amalgam are then practically one compound plug. This method does away with the unsightly appearance of large blocks of amalgam, reduces the liability of shrinkage, secures the preserving qualities of the mercury as a germicide, and its ready adaptation.

*C. H. Land, in Office and Laboratory.*

## NEW TREATMENT FOR PYORRHEA.

*Dr. C. H. Rosenthal.*

In presenting a treatment for pyorrhea alveolaris I will not attempt to give a scientific basis for my method, since it was conceived of observation rather than of profound scientific research.

Several months ago I had occasion to see a mouth in which I had placed a piece of bridge-work three months prior. The bridge consisted of two gold caps on the lower cuspid teeth, sustaining the central and lateral incisors which, as a result of pyorrhea alveolaris, had been lost. The cuspids to which the crowns were attached, as well as the proximal bicuspid, were also badly

affected ; so much so, in fact, that at the time I was apprehensive of the result. To my astonishment, three months after the operation, I found that the cuspid teeth had regained much of their firmness and an entire cessation of secretions. The bicuspid were still in the same condition as when the work was done. This caused me to suspect that the presence of the metal, which was driven well under the free margins of the gum, and made of 20k. gold, alloyed with silver only, might account for the cure. I at once placed gold bands around the necks of the bicuspid teeth, cementing them firmly in place to prevent riding. In an incredibly short time, about these teeth, too, the flow of pus stopped. I have tried this method in three cases since with uniformly good results. In the most recent case, instead of using the gold bands, I used pure silver. This idea was suggested recently at the Johns Hopkins University, where experiments were made on silver disks by pouring pus cultures on glass slabs ; where the cultures came in contact with the silver they at once became innocuous. This silver-band experiment proved by far the most valuable. In the short time of five days there was an entire abatement of the secretions. This led me to believe that it was the silver contained in the gold crown of my first experiments that did the work. The experiments at the Johns Hopkins University show silver to be the best agent of all the metals to destroy pus cultures.

The method of adjusting the bands is much the same as making a gold crown—fitting snugly to the tooth and cementing firmly. None of the metal need be exposed to view, since the only object is to have it in contact with the diseased tissue. I have not removed the bands in any of the cases, and therefore cannot state if there will be a recurrence of the trouble. I am of opinion, however, that if all the teeth affected were treated in this manner, and the disease entirely eradicated from the mouth, there would be no recurrence. Should this not prove true the bands left on the teeth permanently would certainly be an improvement on pyorrhea alveolaris. More anon.

*Register.*

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There is no such thing as luck. Luck is pluck. Luck is a foolish doctrine of fate ; it is the silliness of superstition ; it is the cynicism of fools, incompetents and failures. You never hear a real sensible man talking about luck ; he knows the philosophy of success too well ; he knows the meaning of patience and pains-taking care, of energy and economy.

*Rev. J. G. Rust, Baptist, Nashville, Conn.*

## PROGRESS OF SCIENTIFIC WORK.

A year or two ago attention was called to the prediction of an eminent authority that we were entering on a period of scientific activity that would far transcend any previous experience. The most indifferent observer cannot fail to be amazed at the manner in which this prophecy is being fulfilled. Chemists are astonished to find that the long familiar atmosphere contains a large proportion of a substance hitherto unknown—the strange and inert argon; and helium, so long known in the spectrum of the sun, is discovered as a terrestrial element. With the liquefaction of air and hydrogen we are introduced to a new chemistry of cold. The development of the electric furnace brings great possibilities in the reduction of certain metals, and among its remarkable products yields calcium carbide, the source of acetylene, which is the first hydro-carbon to be produced artificially on a large scale, and a revolutionary achievement in chemical synthesis. Most surprising of all is the new form of radiant energy. Eager students everywhere have quickly begun experimenting with the mysterious X rays, and in a few days we are given the new art of “shadowgraphy,” which promises, among other marvels, that the sick can have their diseased organs brought to view, while the curious can have their skeletons photographed while they wait. The details of this new photography are being improved daily. Other epoch-making discoveries are almost grasped, and it is clear that, with so many roads opened to peaceful conquests, our end-of-the-century days leave no time for demoralizing wars over political boundaries.

*Mining.*

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A man writes to the *British Journal* to say: “That food is not properly prepared for the body by artificial teeth which cover the surface of the mouth.” His must be a singular set of teeth that “covers the surface of the mouth;” but his remedy for his difficulty is still more unique. Chews his food, and then “before the bolus is swallowed I take the artificial pieces from my mouth so that the bolus may have the free action of the mouth.” I hope he has a table by himself and plenty of time to eat. “I find,” he continues, “that one feels perfectly comfortable by acting in the manner stated, whilst food swallowed without having the free action of the mouth causes one to feel ‘cold,’ the head somewhat ‘strained up,’ and a general feeling of discomfort in comparison to when the food has had the free action of mouth.”

## OUR QUESTION BOX.

With Replies From The Best Dental Authorities.

[Address all Questions for this Department to Dr. E. N. Francis, Uvalde, Texas.]

**Question 243.** *Does drying out impression, previous to pouring metal die, interfere with fit of plate?*

No,

A. L. Whitney, Denver, Col.

No.

W. F. Schwaner, Winterset, Iowa.

Yes; from shrinkage of plaster. But there is no need of making a die in this way. It is far better to make a mold in oiled sand and cast a Babbitt metal die.

L. P. Haskell, Chicago, Ill.

**Question 244.** *Is it good practice to insert temporary plate soon—within twenty-four hours after extracting?*

Yes; and often get the best results by so doing. W. F. Schwaner.

Except where many molars are removed, and the gums badly lacerated, I believe a temporary plate is advisable, especially in the upper jaw. The gums shrink more evenly and the "permanent" plate is more permanent.

A. L. Whitney.

My practice has been to take the impression immediately after extraction and insert the new teeth within thirty-six hours. As this is temporary, the sooner the patient is relieved of the necessity of appearing toothless, the better, and also because with a plate inserted at once, the gums will not be as tender as if postponed several weeks.

L. P. Haskell.

**Question 245.** *What is the usual time for permanent plate required for shrinkage after extraction?*

From six to eight months.

W. F. Schwaner.

Three months; but the mouth will shrink, after inserting a plate, if you wait three years.

A. L. Whitney.

As a rule, if many teeth are extracted at once, the bone is not in a permanent condition under one year.

L. P. Haskell.

**Question 246.** *Patient fifty-four years of age; articulation of teeth, good; both plates seem to fit well alternately, but in mastication the upper denture tilts continually. Plates have been used three months with no improvement. Would a Stedman spring tend to retain upper plate, or would an automatic suction cavity be available?*

If you cannot make a better fitting plate, try the Stedman spring.

W. F. Schwaner.

The fault is probably in the arrangement and articulation of the teeth. Set the upper teeth a little inside the alveola ridge and bring the force of mastication back of the first bicuspid.

A. L. Whitney.

Air chambers in full sets are unnecessary. (See page 349 of this ITEMS.)

I have no trouble with upper plates as to suction; my trouble is with the lower plate.

Swage an aluminum plate with "relief" in the palate, as described in the *Cosmos* and you will probably succeed better than with rubber in bad cases. The "relief" is made in the rubber plate by scraping from the plate.

The reason of the upper plate tilting is simply that it rocks over the hard center—relieve it. If you have an air chamber you cannot relieve it, as the anterior and posterior margins of the chamber must rest on the hard center, as well as elsewhere, in order to exclude air and form a vacuum.

L. P. Haskell.

**Question 247.** *What is the legal penalty for destroying United States gold coin by rolling out for crown- and bridge-work? Has the penalty ever been enforced against a dentist?*

Do not know what the penalty is.

It has been enforced against jewelers, but not against a dentist. Something like a fine of \$50, not more.

W. F. Schwaner.

Do not know of any penalty for a man's using what belongs to him, so long as he does not mutilate, by clipping or boring, and then pass it into circulation again.

In any event, there is no need of "Uncle Sam" knowing what you do with it.

L. P. Haskell.

[There is no penalty. The only penalty is in circulating defaced coin. —T. B. WELCH.]

**Question 248.** *Is there any rule to properly mix the porcelain body to obtain the required shade for porcelain crowns or bridges? I have twenty-four shades, but cannot mix them to obtain the desired color.*

The tooth itself should be the shade required, in crown- and bridge-work, and when the neck of tooth is extended to cover the plate (never a darker body), always yellow is needed.

I use Close's material exclusively.

L. P. Haskell.

**Question 249.** *How shall I fasten upper denture when palatin roof and alveola ridge is very flat? Several plates have been made, but all too easy to pull down.*

Make a large and thick air chamber, and have the air chamber well back on plate.

W. F. Schwaner.

Good success is often attained in such cases by dispensing with the air chamber and depending on an accurate fit relieved over the hard parts.

A. L. Whitney.

Proceed with case as described in *Cosmos* article. The case there illustrated is the worst I ever saw, and the patient said, after wearing eighteen months, he often forgot he was wearing artificial teeth.

Flat mouths have no terror for me; in fact, I prefer them to high ones.

L. P. Haskell.

## PRACTICAL POINTS.

*By Mrs. J. M. Walker, Bay St. Louis, Mississippi.*

**Tin Coating for Plaster Casts.**—Reduce ordinary collodion with about three times its bulk of ether and add powdered tin till the solution is well impregnated with the metal. Applied with a brush, an even coating of tin is formed on the model, so dense as to closely resemble tin foil, and so firm as not to be detached by boiling water. A plate vulcanized on a model thus prepared is as readily cleansed with a coarse brush as though made in a metallic mold.

*Chas. P. Alker.*

**Moisture-tight Gutta-percha Fillings.**—Dissolve common resin in chloroform to the consistency of varnish. Apply to walls of cavity and quickly pack softened gutta-percha, with a cool plugger; trim with thin, hot instruments.

*J. G. Templeton.*

**Stiffening Trial Plates for Lower Jaw.**—Anneal ordinary iron wire and twist two strands together and cut into suitable lengths. Warm and imbed in the trial plate; will prevent bending and displacement of teeth.

\* \* \*

### **Non-Coagulating Antiseptic Dressing for Root Canals:**

Oil cassia,

Oil caezophil..... āā fl ȝij.

Beta naphthol..... grs. xx. M.

*A. C. Hewitt.*

**Periostitis** —Phosphorated oil (U. S. Ph.  $\frac{1}{100}$ ) is a sovereign remedy for periostitis. Cleanse and dry the cavity and insert a few drops on cotton, held in place by gutta-percha. This may be kept in the cavity for days and weeks to the great comfort of the patient.

*Herman Printz, in Ohio Dental Journal.*

**Removal of Green-stain.**—Remove all oily deposits by the application on cotton of ammonia or bicarbonate of soda, followed by clear water, and this followed by 25 per cent pyrozone, well rubbed in with cotton or a leather buff. Follow by soda to neutralize the slight acidity, and the caustic effects on the soft tissues. This accomplishes the object without injury to the teeth in either structure or lustre.

*S. B. Palmer.*

**An Ideal Antiseptic.**—Borin, applied locally on cotton, in diseased cavities, and as a wash for unhealthy gums has, without exception, proved itself quieting and healing in its action as an antiseptic.

*Dr. Barrie Milligan.*

**To Dissolve Dead Bone.—**

R. Pure scale pepsin .....	3ss.
Nitro muriatic acid.....	3 i.
Distilled water.....	o i.

Carefully wash the sinus with half-strength peroxid hydrogen. Then inject the above twice daily. *Southern Dental Journal.*

**Treatment of Root Canals for Immediate Filling.**—Apply dam, open pulp chamber freely; soak pledget of cotton in sulfuric acid and place in pulp chamber.

1. Pump sulfuric acid into canals to apex with No. 5 Donaldson canal cleanser.

2. With drop tube flood with saturated solution bicarbonate soda. This throws out débris, neutralizes acid, and cleanses thoroughly. Dry with 5 per cent pyrozone followed by hot air.

3. Flood canal with equal parts carbolic acid and iodine, followed by iodoform and glycerin, which force through root. Fill with chloro-percha and gutta-percha points. Fill cavity permanently. *Chas. Welch.*

**Abscess.**—Aristol incorporated in beechwood creasote to the consistency of cream is efficacious in purulent discharges from abscess. *Dental Review.*

**Tin and Gold.**—I recommend five parts of gold to one of tin, as follows: One sheet Abbey's non-cohesive gold foil No. 6; on this lay a sheet of No. 4; on this a sheet of tin foil, No. 4; on this another sheet Abbey's non-cohesive gold No. 4, and another sheet of No. 6. Cut into strips, crimp and cut into pieces a little longer than the depth of the cavity. Roll some into cylinders; use others, left open, in starting the filling. If the cavity is open from the grinding surface finish with cohesive gold, with a few pieces of crystal mat gold first. In very deep cavities first insert a piece of asbestos saturated with cinnamon oil and cover with Robinson's fibrous foil. *Wm. A. Spring, Dresden, Germany.*

**Root Canal Filling.**—Fill with chloro-percha; moisten a gutta-percha point in chloroform and press down. Then heat a copper point (made from wire, such as is used for electric bells) and drive home. The gutta-percha prevents discoloration of the tooth. Before inserting the copper point, if the larger end is flattened slightly, it will afford support for an alloy filling which will adhere closely to it. *C. D. Hand.*

**Green-stain.**—Use pyrozone to take off the stain, and milk of magnesia to prevent its return, the latter correcting the conditions that made the deposit of the pigment possible. *J. E. Line.*

## ITEMS.

The common black wax, teeth are sometimes mounted on, is good for fitting crowns.

*N. C. A. Berg.*

\* \* \*

ROOT FILLING.—When the root canals are ready for a filling, mix equal parts of oxid of zinc and iodoform on tray and add creasote to make a thin paste. Fill canals with the paste and absorb all creasote (as near as possible) from filling by absorbent cotton pellets. After using it this way more than three years I find no bad results.

*Jas. R. Southworth.*

\* \* \*

Might I draw your attention to page 250, April number ITEMS, "A Substitute for Gold." "To this a quantity of magnesium carbonate is added to increase its specific gravity." I would like to know how this is done? Adding a light powder to two metals is not going to increase the specific gravity. Besides it would be impossible to combine magnesium carbonate with gold.

*J. M. M.*

\* \* \*

In using "Holingsworth's system of crown and bridge-work," lengthen the cusps (if desired) by boring out the depressions in female die, instead of building up cusp on button with Mellott's "mud" (by directions). In making open-face crowns (incisors and cuspids) by the same system, regulate your collar or band measure by scraping out female die (if too small). If too large, curve the half sections a little and shorten on flat file, instead of building up with the "mud."

*G. B. Moore.*

\* \* \*

TO BORE GLASS.—Strong glass plates are bored through by means of rotating brass tubes of the necessary diameter, which are filled with water during boring. To the water there is added finely pulverized emery. The boring cylinder is put into motion by means of a drill or bow drill. Weaker glass can be provided with holes in an easier manner by pressing a disk of wet clay on the glass and making a hole through the clay of the width desired, so that the glass is laid bare here. Then molten lead is poured into the hole, and lead and glass drop down at once. This method is based on the quick, local heating of the glass, whereby it obtains a circular crack, the outline of which corresponds to the outline of the hole made in the clay. The cutting of glass tubes, cylinders, etc., in the factories is based on the same principle, says a Pittsburgh paper called *China, Glass and Lamps*.

An excellent method of separating teeth for examination of proximal surfaces, when standing close together and marginal ridges intact, is to take a cord of suitable size, pass it through the interdental space and tie in a good firm knot. The knot may be on the occlusal surface or on the labial or buccal.

The cord exerts its force both by shortening in length and expanding in width. If it is not easy to get through, take a very small wire, double it; also double the cord; put the loop of one in the loop of the other and twist the wire. This makes a needle, which passes easily through the space. One end of the cord may be pulled through, or the cord may be twisted, if you want it heavy.

*J. R. Cenyton, Shelbyville, Ind.*

\* \* \*

Charles Yawger, nineteen years old, of No. 66 Valley street, Orange, N. J., is in the Orange Memorial Hospital, dying from excessive cigaret smoking. Less than a year ago he was healthy and robust, though a constant smoker. Two months ago his eyes began to fail, and he was told that he must stop smoking. This, he said, he could not do.

He was sent to the hospital, and Dr. Hedges, the House Physician, at once pronounced him beyond recovery. This was two weeks ago, and since then the disease has developed and death is looked for at any moment.

*Journal.*

\* \* \*

Pack cotton or bibulous paper in deep-seated, sensitive cavities to catch the point of instrument when chiseling down the edges.

Use a little Venitian red or vermilion in your liquid silex to color it. It marks distinctly the line between the model and impression.

To remove hard bumps in corundum wheels, make a sharp drill of a broken or worn-out excavator or plugger, then heat and apply it to the hard place in wheel; at same time turn the drill back and forth. The heat softens the shellac and the motion works it out.

*J. K. Moose, D.D.S., Lenoir, N. C.*

\* \* \*

THE SOLDERING IRON.—The soldering iron should be kept in perfect condition, otherwise good results cannot be obtained. A simple method of tinning the iron is, file copper down to clean surface and shape as desired. Place a small piece of tin or tinman's solder (half and half) on a slab of sal-ammoniac, having iron thoroughly heated; rub it over slab, allowing it to come in contact with the tin till melted; then by a slight rotating motion iron will tin very readily. It is better to use tinman's solder

for this purpose, as tin alone pits the iron. Care should be taken not to overheat iron in subsequent use, otherwise the tinned surface will be destroyed. When soldering, care should be taken to have clean surfaces. The soldering fluid (chlorid of zinc); causing rapid oxidation, should not be applied till the iron is hot and ready for use, otherwise good union will not be obtained.

*F. Messerschmitt, D.D.S.*

\* \* \*

An easy method of separating the anterior teeth for filling cavities that do not involve the cutting edge is to insert a thin wedge-shaped instrument between teeth to be separated, lingu-ally, near the cutting edge; press slowly and firmly, continue till desired space is obtained. With an orange-wood wedge gently pressed to place at gingival margin, remove the wedge instrument; you have no mechanical separators in the way, nor have you given your patient much pain.

*F. Ewing Roach, D.D.S., Chicago.*

\* \* \*

A GREAT INCREASE IN THE OUTPUT OF ALUMINUM.—One of the most marvelous facts of the present is the wide field of usefulness of aluminum. So varied are the uses to which it can be put that it is estimated the output the coming year will be fully 3,000,000 pounds, an average of 10,000 pounds a day.

In 1894 there was practically but one aluminum reduction works in the country, located at Pittsburg, and the output for that year was 550,000 pounds. In 1895 this was increased to 850,000 pounds, and now that the plant has been removed to the hydraulic power possibilities of Niagara Falls, it is estimated the output will reach 3,000,000 pounds.

In addition to this, there is claimed for the plant just reaching completion at Fairlawn, a suburb of St. Louis, Mo., a daily capacity of 20,000 pounds. From the refuse left from the process of making aluminum is made a remarkable product known as mineral wool, which is used for steam-pipe packing, in place of asbestos, and in the manufacture of refrigerators, storage trunks, etc.

\* \* \*

ACONIT TO ABORT COLDS.—The *Medical Record* strongly advocates the plan of giving aconit in the abortive treatment of colds. Small and frequent repeated doses are given, with the result that the fever is controlled, the pain in the muscles disappears, and the patient put on the road to recovery. Aconit is a powerful aid in the treatment of acute bronchitis and colds in the head and chest.

## EDITORIAL.

### AN ABSCESS OF A TOOTH.

Dr. L. M. Rhein, of New York says :

“ By an alveolar abscess we understand a pathological condition involving the infiltration of some portion of the alveolar process of the maxilla with purulent matter.”

Dr. Rhein is a scholar and a dental practitioner of long experience, yet we venture a few criticisms, though it will involve some things we have before said :

First. Instead of an abscess being an “ infiltration of some portion of the alveolar process of the maxilla with purulent matter,” is it not a fungous growth on the apex of the root of a tooth?

Second. Instead of this fungous growth “ involving the infiltration of some portion of the alveolar process of the maxilla with purulent matter,” is not its pus confined in a strong sac to prevent its infiltration, or even its contact, with its bony environment?

Third. Instead of its purulent matter, or pus, spreading itself as described by Dr. Rhein, its only escape from its sac is either through the apical opening into the tooth to which it is attached, or through its fistulous tube to the surface.

Fourth. The only effect an abscess has on the alveolar abscess, or the muscles through which its fistulous tube passes, is its mechanical pressure in making for itself room and outlet. And this sac and this tube are made for the very purpose of preventing infiltration of the alveolus and surrounding muscles with its purulent matter.

Fifth. If my description of an abscess is correct, is not the very name Dr. Rhein and others give this fungous growth a misnomer? for, instead of its being an “ *alveolar* abscess,” is it not an abscess of a tooth? It is not a disease of the alveolus, nor in any way attached to it or dependent on it for its life or growth.

Sixth. We presume Dr. Rhein's error is the common one of

failing to distinguish between an abscess and an ulcer of a tooth. An abscess is always found attached to the apex of the root. An ulcer may be anywhere on the surface of a root, or on or in the alveolar process. Dr. Rhein's definition of an abscess exactly fits the characteristics of an ulcer ; for whether an ulcer originates on the surface of a tooth, or on or in the alveolus, it is "a pathological condition involving the infiltration of some portion of the alveolar process of the maxilla with purulent matter."

Seventh. An abscess never comes on a root of a tooth till the pulp of the root is dead, but an ulcer may come at any time. An abscess is really a bulbous growth on the rootwise extremity of the bundle of blood-vessels and nerves which before the death of the root entered and ramified the living pulp. It is at this point of its previous entrance into the root that we find the attachment of the abscess to the skin of the root. Break this attachment and you destroy the abscess.

Eighth. The pus of an abscess is nearly harmless, but the matter of an ulcer is so corrosive as to eat into any tissue with which it comes in contact ; if on a tooth—even a live tooth—it may eat entirely through the root.

It is obvious, therefore, that for intelligent treatment, we should be able to clearly discern between an abscess and an ulcer.

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### IN OUR CONVENTIONS.

If in our conventions each speaker would unselfishly estimate the amount of time he consumes by multiplying his time by the number who are listening to him, he would better prepare himself to improve his time of speaking. Clear, methodical reflection before speaking is as essential as the acquisition of skill before doing ; and the proper use and economy of words in speaking is as essential as economy and the best choice of acts in manipulation. Some are all day doing nothing, and they are all day speaking without saying anything. No wonder they are poor, both in purse and in thoughts. They are noted for skimming on the surface of things. Noisy, perhaps, and perhaps busy ; but

only busy bobbing up and down as a pupil, or jumping about in a half-bushel—but accomplishing nothing worth their energy or their time.

It does seem as though some, at our meetings, are afraid they will not be the first on their feet, so that they rise before formulating any thought, and rush into controversy without any discretion. They trust to a thought coming to them, and they speak against time till it comes. Oh! what a bore they are—and never more are they in their element than while showing their own shallowness. While thus open to all manner of criticisms, they are generally the first and the loudest to criticise everything and everybody but their own vaporings.

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### TOO LATE.

Some people seem to be born too late; and in every enterprise of life they are too late for its advantageous execution. They can often see how they might have become rich on this or that occasion, if they had seen their opportunity a little sooner, or seeing it, had thrown their life into it; but they were too late. If they had bought this or that property while it was rising; if they had “caught on” to this or that while it was in demand; if they had comprehended and appreciated this or that device, process or manipulation while it was new, it would have made them prosperous and popular. But they were too late. Others were before them.

I know a dentist who, in the early experiences of gas, came into a country town of three thousand inhabitants to find its four dentists all asleep on the subject of its administration, and, of course, as with gas so with other “innovations” as they called them. He had come only to leave his wife for awhile, as the place was noted for its healthfulness and she was in ill health. “O,” said they—all four of them—“gas is a humbug, and as for such expensive work as you speak of there is not the money here to pay for it, and no one who would appreciate it. They can hardly pay for the most ordinary work; so that not one of us are making a good

living. Even for extracting you can't get but twenty-five cents. We get but a half dollar for extracting three teeth, and nothing for extracting any number if we are to make a plate. Amalgam fillings are but fifty cents each and gold fillings but a dollar. We can get only eight to ten dollars for a rubber plate."

That man concluded to stay there for awhile, and see what enterprise and skill would do. He opened a nice, clean, inviting office, in great contrast with their dirty, dingy, uninviting places, and made "Saving Teeth" his motto, and "Painless extracting where teeth cannot be saved." Families that had always gone to the near-by city for their dentistry began to think of the new dentist. His very appearance was in his favor, and people said his office was just like a parlor. Betsey, the kitchen maid of 'Squire Green had the toothache, but "would not have the tooth out because it would hurt so." Mr. Green said, "Now, Betsey, I will take you where it shall not hurt you at all;" and he brought her to the new dentist, though he was incredulous himself. But sure enough, the extracting was a delight. Two other teeth, which were supposed to be "too far gone to be filled," were nicely filled with amalgam. True, the extracting had cost her a dollar instead of twenty-five cents, and the two fillings two dollars instead of one, "But just think how nicely all had been done! And then, too, I should surely have lost all three teeth if I had gone to Allen." Do you think that family any longer went to the city for their dentistry? They paid the new dentist seventy-five dollars during the next two months. And the Green's brought the Wilson's, and the Wilson's the Gage's, and their example became epidemic. The receipts for the first year were twenty-two hundred dollars.

It is true, when that new dentist went there, there were already too many dentists of the kind; but the fact is, every community needs one dentist that is not of that kind, and they will generally support him. And there is not so very much difference between the two kinds. The one is too late in taking on improvements; the other is wide awake for all there is for him; the one is too late in his confidence in himself and in the community, the other believes if he can do the best work he will get the best pay, and will be considered the best dentist by those who are able to pay the

best prices. All over the backs of those four dentists was written—"Too late; too late," but in every feature and movement of the new dentist you could see "Enterprise."

A dentist who had dragged along in a sleepy way for more than ten years was startled one day by "a mountebank" advertising from a neighboring hotel, "Teeth extracted without pain, for two weeks." "I'll fix him," said the old dentist to himself, "I'll have him arrested as a fraud." He sent one of his own patients with an aching tooth to him that he might be a witness in the suit. And the next day he sent another. But both came back reporting it was a wonderful success. "It didn't hurt a bit. He just pricked the gum a little, and the tooth came out without my feeling it." That old dentist happened not to be a fool. He went himself and saw others have teeth out painlessly, and saw the dentist taking in his ten dollars an hour. Before the stranger left, the sleepy dentist waked up. "I am too late for you, sir," said he; "you are welcome to the six hundred dollars you have made, but now give me the secret and I'll show that I can do as well." His business was quickly doubled; for though he saved very many teeth brought to him for extraction, the fact that he could extract without pain gave him reputation for all other kinds of work. And the fact that he had waked up to this great boon to his patients made him a better dentist in all other respects.

And yet, as long as this painless extraction has been a success with a few, how many are still butchering in the old way. In this and in other advanced practices they are late in grasping golden opportunities—too late to take new things at their flood.

A young man wrote me the other day:

"I am doing remarkably well in my new bridge-work. I have now on my bench three cases in preparation, which together will bring me six hundred dollars, and I have just taken three hundred dollars that I have done during the last two weeks. For the first year I had pretty hard work to make people believe it was cleanly, comfortable and durable, but now I have no trouble; and I make five times as much as before I added this to my general practice." That young man was determined not to be too late in

pushing what is bound to be the common practice of first-class practitioners.

Wake up, young man. Walk to the front. Let no one step before you and take the cream while you have only the skim milk. By and by will be too late. The world moves. The profession is advancing. You will be too late for profitable practice if you do not prepare yourself to do the best work that can be done.

You are now able to do what, fifty years ago, would have made you a marvel of skill, for you would have stood out distinctively for what most others could not have done. But all that has past. To be distinctive and successful now, you must know more, and have the skill to do more than the most skilful did then, and more than the ordinary dentist knows now. You must keep up with the procession, or be constantly too late to occupy advantageous and advancing positions. These are occupied only by those who rise early, work hard, and keep to the front, where there is little crowding and little competition, and much intelligence, skill and compensation.

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### PAINS-TAKING.

It is the pains-taker who is substantially and permanently successful. We envy the genius and admire the man of tact, but neither genius nor tact can take the place of pains-taking. I have seen the genius throw off a smart piece of work that dazzled belief. He has done in a trice what would have taken a plodder days to accomplish; and I have seen the man of tact contrive a short road to success that made him rich in a day. But shall the plodder be discouraged? From the very fact that Mr. Genius did his work so easily, it gave him little discipline, and the shrewd man spends illy his quickly gotten gain. But for the very reason that Mr. Plodder is obliged to contrive and study and work so hard to accomplish his purposes, it gives him the discipline and mental growth and substantial practical sense and skill that enables him to forge ahead gradually and steadily in normal growth to a sure, satisfying, and permanent position. It is true, the

genius is continually applauded, and the shrewd are flattered, while the plodder is laughed at for his awkwardness; yet the pains-taker improves by his blunders and his gains are substantial.

There is this satisfaction for us all: Though we are not a genius, and have no tact for making money without work, we can be a plodder; and though we may not enjoy the inspiration of the genius or the cunning of the expert, we may, with patient well-doing and careful pains-taking, have the reward of good, substantial, honest work, and the luxury of a quiet, useful, and successful life.

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#### DENTAL DEPARTMENT OF THE NATIONAL MUSEUM.

At last this is arranged. It is now for the dental profession to take advantage of the arrangement. It is a part of a fire-proof building of ample size, and immediately connected with the exhibition of general anatomical specimens.

Now, if the American and the Southern would merge, and make Washington its headquarters for annual meetings and special investigations, the arrangement would be complete.

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It is only the few who are not vanquished by disheartening defeats. Look along down the pathway of your own life and count the dead whom disaster has overtaken. Yet, away in advance you see giants. These are they who have been killed many times, and yet have many lives to spare. The more times you kill some men the more tenacious and vigorous and triumphant their life becomes.

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The Kentucky State Dental Association will hold its annual meeting in Louisville June 16th to 19th, 1896. A cordial invitation is extended to members of the profession in good standing to be present. The State Board of Dental Examiners will meet at the same time and place for examination of candidates and such other business as may come before it.

## HINTS.

The one less inclined to take advice is generally the one who needs it the most.

\* \* \*

The dentists of New Orleans are a fine set of men. As it should be in every city of the Union, they meet monthly and keep up with everything new in their line.

\* \* \*

The gum on the back of postage stamps is said to be made from alcohol one part, acetic acid one part, dextrin two parts, and water five parts.

\* \* \*

It is said that the tendons found in the tail of a dog make better sutures than either catgut or kangaroo tendon, when properly prepared in sublimate.

\* \* \*

Prof. Joseph W. Richards recommends for aluminum solder: Aluminum, one part; a 10 per cent phosphor tin, one part; zinc, eleven parts, and tin, twenty-nine parts. The phosphorus seems to be an essential ingredient.

\* \* \*

A HINT TO STAMMERERS.—Dr. Shretel offers a hint which may prove useful to persons afflicted with the impediment of stammering. If the sufferer will always fill his lungs by a strong inhalation before he begins to speak, he may very readily cure the most obstinate case.

\* \* \*

In capping pulps, H. J. McKellops, whether the pulp is actually exposed or merely sensitive to heat and cold, cuts a cap from asbestos paper and covers it with a paste of iodoform and glycerin. He is satisfied that any one who tries this method will get good results.

\* \* \*

A dentist writes us that he thinks it unjust that a certificate of dental qualification in one State does not entitle him to practice in any other State; and that our dental colleges do not give diplomas on merit without requiring specified attendance at college. These are vexed and vexing questions.

Simon Lague, of Crawfordsville, Ind., has filed a suit for divorce from his wife on the ground that she chews tobacco. They were married in 1884 and four years later she left him because he refused to buy her any more tobacco. Who ever heard of a woman suing for divorce for a similar reason?

\* \* \*

The man who knows everything and can do anything is usually a blockhead. The man who is willing to sit at the feet of the humblest, and can learn something from the most unassuming, becomes rich in variety of store; and that store of wealth is sure to be so manipulated as to serve him as wisdom on many an exigency. The true scholar treasures up something valuable from every one and from every phase of life.

\* \* \*

A NEW TREATMENT FOR BOILS.—Dr. Bower recommends for boils and carbuncles a preparation made by moistening one part of camphor with a few drops of alcohol, and rubbing in a mortar with one-fourth part of salol, till a transparent fluid is obtained, which he calls camphorated salol. On its application on cotton protected from evaporation, a change usually takes place in from twelve to twenty-four hours; pain diminishes, and the tumor becomes progressively smaller, without the formation of pus.

\* \* \*

CITRIC ACID IN DIPHTHERIA.—For many years an English physician has used pure lemon juice as the best tonic for diphtheria and sore throat in general, and mentions a case in which the son of a medical man in one of the Paris hospitals cured himself of diphtheria by constantly sucking oranges or lemons, a small basketful of which was placed for this purpose at his bedside. A Danish physician, Dr. Bock, recommends a ten per cent solution of citric of acid, to be given in spoonful doses every two hours.

\* \* \*

PROFESSOR FARRAND'S GREAT DISCOVERY.—Among the really eminent botanists of America, Prof. Farrand, of Vermont, easily stands in the front rank, and a discovery that he has recently made will do much to add to his fame.

After long research he has found a happy combination of herbs and leaves that contain the peculiar health-giving qualities of the famous Adirondack regions, where diseases of air passages are unknown. Wherever tried this has given great relief, and 93 per cent of the cases reported a perfect cure of asthma and hay fever, some of them seemingly hopeless cases.

Dr. J. R. Southworth, of Little Rock, Ark., uses the following as a local anesthetic instead of cocain :

R. Chloroform,	
Tr. aconite.....	āā. ℥iij
Tr. capsicum.....	℥j
Tr. pyrethrum .....	℥ss
Oil cloves.....	℥ss
Pul. camphor.....	℥ss
Met. fl. sol.	

**DIRECTIONS.**—Take a pledget of cotton large enough to envelop the tooth to be extracted, and the surrounding gum ; saturate it with the fluid and apply to tooth and gum, holding in contact—at same time rubbing with thumb and finger—for about half a minute ; after a lapse of half a minute, apply again in the same manner. Then extract the tooth.

\* \* \*

Electrozone is obtained by the passage of an electric current through pure sea water. This decomposes the chlorids, bromids and other elements of sea water, changing them into hypochlorits and hypo-bromits and other compounds, which readily act on diseased tissues, killing the germs which cause the disease, and producing at once a healthful condition.

Electrozone is manufactured with the aid of the electric current, and the active oxidizing agent is ozone.

Electrozone is said to be the most powerful germicid, antiseptic, disinfectant and deodorizer known, and harmless, either when taken internally or applied externally.

\* \* \*

Prof. J. Taft says listerin constitutes a powerful, safe and pleasant antiseptic, one that is markedly efficient in dental as well as in surgical practice. It is free from offensive odor, rather pleasant than otherwise. It can be used anywhere without injury to fabrics or producing rust. It is valuable for both internal and external use (especially in those affections in which fermentation is a factor) ; for instance, where there is fermentation and acid eructations from the contents of the stomach. For various affections of the throat it is an excellent gargle ; it is also valuable as a wash for various conditions of the mouth, and in the treatment of the ordinary diseases of the antrum it is one of the most efficient preparations.

## FOR OUR PATIENTS.

A jolly Jew called to have his molars "done up," and between times regaled his dentist with the latest yarns picked up "on the road." The end came, adieus were said, and the following day the dentist received a check and the following lines :

DEAR DOCTOR :

Who saws my gums, and treats me rough,  
And fills my teeth with asphaltum stuff,  
And makes me cry, "now hold! enough!"  
My dentist.

Who says to me, "now open wide,"  
And drilled and punched until I cried,  
And makes me send him checks beside?  
My dentist.

Yours truly,

I. N. H.

The receipt was couched in the following lines :

Who sat me down and gave me chaff,  
Of every kind that made me "laff,"  
Of stories old, of stories new?  
Ah, ha! my friend the Jew.

Who said to me, "Your bill I crave,  
If not too much, I'll ask no shave."  
The sum announced! a breath was lost,  
"I'll send it, 'tis cheap at any cost."  
This feller was I. N. H.

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## ALCOHOL AND HAPPINESS.

The body uses its powers in resisting the outside forces which act on it. Normally, there is a balance between body and environment. If environment prevails we are discouraged; if we are able to prevail, our spirits rise and our happiness grows. And it is not for the moment only, but we compare the accumulated impression of the powers outside of us with the powers which our brains develop, and are happy or unhappy according as we feel our superiority or otherwise. Just how much does alcohol interfere in this balance of power? It clearly cannot lessen the power of outside influences which harm us; it can as clearly not increase our own powers in so far as they enter into this conflict with the outside world—it rather makes us less skilful and able. What can it do then? It can deceive us. It dulls our appreciation of powers outside of us till they seem so much smaller that we are

sure we can conquer them, and so we gain a feeling of satisfaction. Nine-tenths of those who take strong drink seek this feeling in alcohol. This is their "refreshing" at eventide, their "rest from the day's cares," their "forgetfulness of sorrows;" but it rests on a deceit, and at the least trial falls into ruin. He who to-day forgets is not any stronger to-morrow, and so is constantly tempted to a new appeal to his false friend, till his senses are so dulled that every duty is forgotten. His holiest interests are but shadows and mist before his eyes, and he knows nothing more but thirst for the deceitful drink. Even the defenders of alcohol at last call a halt; but they have forgotten that the first steps are much more easily undone than the later ones, when the brain has in a measure lost its power to control. They do not forget through malice, but because they have not rightly understood the physiological effect of alcohol.

*Dr. Justus Gaule, in Popular Science Monthly.*

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### THE NEW WORKS OF SCIENCE.

As the proud nineteenth century draws to a close, it would seem that its representatives have good reason to be proud of the legacy to be left by them to succeeding ages. The last century saw the infancy of the steam engine, saw the isolation of oxygen gas and of a few other substances in the field of chemistry, and that is nearly all in science given to the present age by its predecessor. Before 1800 the cities of the world were still lighted by lamps and candles; electricity had its highest development in the inefficient frictional electric machines; railroads and steamboats were not yet a factor in transportation, and even the roads of England had but begun to be made; the adage that there is nothing new under the sun applied with full force to the few achievements in science of the world one hundred years ago.

Then the nineteenth century commenced. Gas lighting was introduced and the nocturnal crimes of great cities almost ceased. Lavoisier's and Priestley's discovery of oxygen began to bear fruit, and modern chemistry, which is a little over a century old, gradually took a position in the world of science. The galvanic battery gave strong current electricity, Sir Humphry Davy produced the electric light and the metals of the alkalis; the steamboat, locomotive and telegraph came into existence, and for a time it seemed as if man had all he could attend to in developing the new discoveries. Faraday's investigations led to the invention of the magneto generator; slowly the idea of a self-exciting dynamo

was developed, and slowly enough the world awoke to the idea that the old prophecy of Goethe, that electricity only applied to the smaller business of life, might be falsified. Then, just as the use of currents of electricity of engineering dimensions was being developed, the almost imperceptible but delicately governed induced current was made to produce the transmission of speech; so that now, in our utilization of the thousand horse power units of electricity for engineering work, and of the minute, almost absolute units for telephonic work, we seem equally to avail ourselves of the colossal and of the microscopic powers of electricity.

The assertion of the progress in science of this century is not needed, and a year ago it would have seemed trite enough to have exalted its achievements. But now, within a few years of the new century, and all within the space of a few months, developments and discoveries, few in number, but of importance enough and wonderful enough to fairly overthrow all our ideas of the limitations of man's power, have been thrust on us.

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### CHILDREN'S TEETH.

*Mrs. J. W. Walker, Bay St. Louis, Miss.*

In an excellent treatise on "Children's Teeth," Mrs. Walker says: As soon as the eight incisors are all in place, procure a soft camel's-hair baby tooth-brush, and begin that regular, systematic care, which alone will preserve them.

Brush the teeth from the gum toward the cutting edge; never brush them in the contrary direction, as that will crowd the gum back and expose the neck of the tooth, which is not protected by enamel.

When the molars appear, brush them in the same way, all round the crown; and also rotate the brush on the grinding surface, to clean the wrinkles in the enamel, where minute fissures sometimes exist which allow acids from decomposing food to penetrate the dentin and cause decay.

Care should be taken to remove every particle of food from around and between the teeth, every time anything is eaten, by at least thoroughly rinsing the mouth with clear water to which has been added listerin, which will correct all odors, either of the food itself, or of the breath, if the stomach is at all disordered, or the system feverish. This will also keep the gums in healthy condition.

The child should be provided with a quill tooth-pick and

taught to use it, after solid food is allowed, such as is liable to become wedged between the teeth. A strand of floss-silk is also useful to dislodge particles of food.

The teeth should be brushed, and the mouth washed, as described, the last thing at night, to remove any possible remnant of food, and the first thing in the morning, to clean them of deposits from the fluids of the mouth, which accumulate during the hours of rest. This accumulation is prevented during the day by the motion of the lips, tongue and cheeks.

The same care and treatment that will preserve the baby's teeth will also preserve teeth at all ages, if regularly, thoroughly and systematically carried out.

As I was going home from my office the other evening a colored woman asked :

"Doctah, what does you charge for pullin' a toof?"

"Fifty cents."

"I has one what's akin, but I b'lieve I'll have it fixed like Sam had his."

"How's that?"

"He had one dat was akin him an' he went an' had an abcess put in it, an' hit ain't hurt any mo'."

"Call at my office at 9 A. M. to-morrow; I have but one abcess left."

*J. K. Moose, D.D.S., Lenoir, N. C.*

Said a lady, coming into a dental office, the other day :

"Do you use the engine?"

"Yes," was the reply.

"That is just what I want you to use on me. How long will it take to fire up?"

THE WRONG CARDS.—A young married lady had just acquired a new coach and a new footman to match. "John," she said, "we will drive out to make a few calls. But I shan't get out of the carriage; you will therefore take the cards that are on my dressing table, and leave one at each house we stop at." "Very good, ma'am," answered John, and ran up stairs to get the cards. After they had driven for a considerable time, and cards had been left at several houses, the lady remarked: "Now we must call at D.'s, F.'s, C.'s," etc. "We can't do it," here broke in the footman in alarm, "I have only the ace of spades and the ten of clubs left!" Instead of the visiting cards he had brought a pack of playing cards.

## NOTICES.

The annual meeting of the New Hampshire Board of Dental Examiners will be held at Manchester, June 23d and 24th. Send for application blanks.

*Edward B. Davis, D.D.S., Sec., Concord.*

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The American Dental Society of Europe will hold its twenty-first meeting at Dresden, Germany, August 3d, 4th and 5th, 1896. All members who plan to be in Europe at that time are cordially invited to attend. Further information can be obtained of the President, Dr. John H. Spaulding, Paris.

*W. A. Spring, 26 Christian St., Dresden.*

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The twenty-second annual meeting of the North Carolina State Dental Society will meet at Morehead City June 17th, 18th, and 19th, 1896. The State Board of Dental Examiners will be held on Tuesday, the 16th, for the examination of all applicants for license. All persons desiring to come before the Board are requested to be present on Tuesday at 10 o'clock, that all examinations may be completed by Wednesday morning.

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SOUTHERN DENTAL ASSOCIATION.—The next annual meeting of the Southern Dental Association will be held in Atlanta, Georgia, commencing the first Tuesday in November. Arrangements are being made for the greatest meeting in the history of the "Southern." The Cotton States and International Exposition will be in progress, and railroad rates will be very low. All friends will be given a hearty welcome.

*E. P. Beadles, Cor. Sec.*

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The joint meeting of the State Dental Associations of Iowa, Nebraska, Kansas and Missouri will be held at Excelsior Springs, Mo., June 23d to 26th. This meeting promises to be one of the largest and best meetings ever held in the West. The most eminent dentists of the four States will be present and participate.

That paragon of hotels, "The Elms," has given us greatly reduced rates, and all railroads give one and one-third rates on certificate plan. Be sure to get receipt for amounts paid in going; if you travel over more than one road, take certificate from each. It will be impossible to get reduced rates returning, without certificate.

*S. C. A. Rubey, Sec., Clinton, Mo.*